GenCore version 4.5
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OM nucleic - nucleic search, using sw model

Run on: July 1, 2002, 08:01:13 ; Search time 2325.7 Seconds
(without alignments)
3253.404 Million cell updates/sec

Title: US-09-303-518D-653
Perfect score: 4407
Sequence: 1 atgaaaacaaccgacaaacg.....aattaggctaccgctggtaa 4407

Scoring table: IDENTITY_NUC
Gapop 10.0 , Gapext 1.0

Searched: 1736436 seqs, 858457221 residues

Total number of hits satisfying chosen parameters: 3472872

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 100 summaries

Database : N_Geneseq_032802:*
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24: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA2002.DAT:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

	Result No.	Score	% Query Match	Length	DB	ID	Description
	1	4407	100.0	4407	20	AAZ12253	Neisseria gonorrho
	2	3996.2	90.7	4365	21	AAZ38917	Neisseria meningit
	3	3954.8	89.7	4374	20	AAZ12251	Neisseria meningit
	4	3954.8	89.7	4374	21	AAF21587	N. meningitidis pa
	5	3954.8	89.7	4374	21	AAA81302	N. meningitidis pa
	6	3954.8	89.7	26778	21	AAA81477	N. meningitidis pa
c	7	3954.8	89.7	349980	21	AAF21612	Neisseria meningit
c	8	3954.8	89.7	837096	21	AAA81489	N. meningitidis pa
	9	3945.2	89.5	4374	21	AAZ38918	Neisseria meningit
	10	3385.8	76.8	4350	20	AAZ12252	Neisseria meningit
	11	1297.8	29.4	4319	17	AAT17215	Adhesion and penet
	12	1193.2	27.1	2991	20	AAZ12250	Neisseria meningit
	13	1020.4	23.2	1312	21	AAA81400	N. meningitidis Me
	14	786.8	17.9	891	21	AAA81401	N. meningitidis Me
	15	737.4	16.7	781	21	AAA81402	N. meningitidis Me
	16	213	4.8	969	18	AAT88142	H. influenzae Hap
c	17	192.4	4.4	30078	21	AAA81520	N. meningitidis pa
c	18	192.4	4.4	349980	21	AAF21608	Neisseria meningit
	19	180.8	4.1	4296	21	AAZ54326	Neisseria meningit
c	20	180.8	4.1	16526	21	AAA81472	N. meningitidis pa
	21	180.8	4.1	172325	21	AAF21613	Neisseria meningit
	22	180.8	4.1	349980	21	AAF21612	Neisseria meningit
	23	174.2	4.0	642	21	AAA81729	N. meningitidis pa
	24	140	3.2	5091	11	AAQ06164	The iga gene, enco
	25	135.6	3.1	4113	22	ABA89172	Escherichia coli p
c	26	135.6	3.1	48254	22	ABA89141	Escherichia coli p
c	27	135.6	3.1	48345	22	ABA89142	Escherichia coli p
	28	122.4	2.8	4128	22	ABA88994	Escherichia coli p
c	29	122.4	2.8	7654	22	ABA88991	Escherichia coli p
c	30	91.4	2.1	116	21	AAA81786	N. meningitidis pa
	31	49	1.1	10732	21	AAA10594	Gene encoding a su
	32	48.4	1.1	4461	23	ABL14674	Drosophila melanog
c	33	43.2	1.0	4411529	22	AAI99682	Mycobacterium tube
	34	43	1.0	2294	18	AAT63246	Genomic sequence e
c	35	42.8	1.0	579	13	AAQ28279	Mutated mature HSZ
c	36	42.8	1.0	579	17	AAT06490	Corn seed storage
c	37	42.8	1.0	639	13	AAQ28278	Mutated HSZ coding
c	38	42.8	1.0	639	17	AAT06489	Corn seed storage
c	39	42.8	1.0	2123	13	AAQ34797	Corn HSZ storage p
c	40	42.8	1.0	2123	17	AAT06488	Corn seed storage
c	41	42.4	1.0	4011	22	AAD06820	Human adenylate cy
	42	42	1.0	3113	23	ABL09653	Drosophila melanog
	43	42	1.0	9213	23	ABL09652	Drosophila melanog
	44	41.8	0.9	4804	21	AAZ46086	cDNA encoding a re
c	45	41.8	0.9	6365	22	ABA17804	Human nervous syst
c	46	41.8	0.9	6365	22	ABA17805	Human nervous syst
	47	41.8	0.9	35133	21	AAA81518	N. meningitidis pa
	48	41.8	0.9	349980	21	AAF21611	Neisseria meningit
	49	41.8	0.9	837096	21	AAA81489	N. meningitidis pa
	50	41.4	0.9	675	21	AAF13164	Aspergillus oryzae
	51	41.4	0.9	3489	21	AAA30290	Kaposi's sarcoma-a
	52	41.4	0.9	3489	22	AAF82901	Nucleotide sequenc
c	53	41.4	0.9	9642	24	ABL32357	Human immune syste
c	54	41.4	0.9	32207	20	AAV73805	KSHV LUR DNA (nucl
c	55	41.4	0.9	137507	19	AAV19941	KSHV long unique c
	56	41.2	0.9	3300	21	AAZ55699	DNA encoding yeast
c	57	41.2	0.9	4260	9	AAN81768	Sequence encoding
c	58	41.2	0.9	4380	9	AAN80222	Sequence of Mycoba
c	59	41.2	0.9	4380	19	AAV05708	Mycobacterium tube
	60	40.8	0.9	400	19	AAV64545	M. tuberculosis im
	61	40.8	0.9	400	19	AAV44436	Mycobacterium tube
	62	40.8	0.9	400	20	AAZ19346	M. tuberculosis an
	63	40.8	0.9	400	20	AAZ19134	M. tuberculosis re
c	64	40.8	0.9	1859	20	AAX25214	Maize ferulate-5-h
c	65	40.8	0.9	1859	22	AAD05736	Maize ferulate-5-h
	66	40.6	0.9	1749	24	AAD21924	M. rosaria pMR2 pl
	67	40.6	0.9	11188	24	AAD21912	Micromonospora ros
c	68	40.6	0.9	4403765	22	AAI99683	Mycobacterium tube
	69	40.4	0.9	1925	22	AAD18251	Sphingomonas elode
	70	40.4	0.9	3211	18	AAT89346	Human p160 cDNA 16
	71	40.4	0.9	3901	18	AAT89345	Human p160 cDNA 16
	72	40	0.9	1686	16	AAQ87587	DNA encoding Leuco
	73	40	0.9	3117	21	AAA49439	Cation channel gen
c	74	40	0.9	7758	24	ABL33102	Human immune syste
c	75	39.4	0.9	3586	24	AAS63366	Chemically pretrea
	76	39.4	0.9	15812	22	ABA18253	Human nervous syst
	77	39.4	0.9	27541	22	AAD17185	Streptomyces nours
	78	39.4	0.9	125401	22	AAD17186	Streptomyces nours
	79	39.2	0.9	217	22	AAK73812	Human immune/haema
	80	39.2	0.9	401	22	AAK67136	Human immune/haema
	81	39.2	0.9	592	21	AAA29153	Rice gamma tocophe
c	82	39.2	0.9	15881	24	ABL32261	Human immune syste

c	83	39.2	0.9	15881	24	AAS61070	Human gene regulat
	84	39	0.9	664	22	AAK73814	Human immune/haema
	85	39	0.9	1325	22	AAD18533	pFUSAB vector DNA
	86	39	0.9	1449	23	AAS52530	E. coli DNA for ce
	87	39	0.9	73947	23	ABL07230	Drosophila melanog
	88	38.8	0.9	960	22	ABA01504	Codon modified hum
	89	38.8	0.9	1439	19	AAV64533	M. tuberculosis im
	90	38.8	0.9	1439	19	AAV44424	Mycobacterium tube
	91	38.8	0.9	1439	20	AAZ19334	M. tuberculosis an
	92	38.8	0.9	1439	20	AAZ19122	M. tuberculosis re
	93	38.8	0.9	1461	23	ABL18553	Drosophila melanog
	94	38.8	0.9	4010	23	ABL18552	Drosophila melanog
c	95	38.8	0.9	6228	24	AAS61431	Human gene regulat
c	96	38.8	0.9	8064	24	ABL33387	Human immune syste
	97	38.6	0.9	1072	23	AAS90738	DNA encoding novel
	98	38.6	0.9	1098	24	AAS97227	Neisseria meningit
	99	38.6	0.9	2408	20	AAV64112	Rhodobacter sphaer
	100	38.6	0.9	2408	20	AAV62125	R. sphaeroides Adh

ALIGNMENTS

RESULT 1
AAZ12253
ID AAZ12253 standard; DNA; 4407 BP.
XX
AC AAZ12253;
XX
DT 08-OCT-1999 (first entry)
XX
DE Neisseria gonorrhoeae complete ORF1 sequence.
XX
KW Neisseria meningitidis; Neisseria gonorrhoeae; antigen; vaccine;
KW treatment; Neisseria infection; meningitis; septicaemia; gonorrhea; ss.
XX
OS Neisseria gonorrhoeae.
XX
PN WO9924578-A2.
XX
PD 20-MAY-1999.
XX
PF 09-OCT-1998; 98WO-IB01665.
XX
PR 01-SEP-1998; 98GB-0019016.
PR 06-NOV-1997; 97GB-0023516.
PR 14-NOV-1997; 97GB-0024190.
PR 18-NOV-1997; 97GB-0024386.
PR 27-NOV-1997; 97GB-0025158.
PR 10-DEC-1997; 97GB-0026147.
PR 14-JAN-1998; 98GB-0000759.
XX
PA (CHIR-) CHIRON SPA.
XX
PI Grandi G, Masignani V, Pizza M, Rappuoli R, Scarlato V;
XX
DR WPI; 1999-327407/27.
DR P-PSDB; AAY38825.
XX
PT Proteins from Neisseria meningitidis and N. gonorrhoeae useful for
PT diagnosis, treatment and prevention of infection
XX
PS Claim 9; Page 370-371; 524pp; English.
XX
CC Nucleotide sequences AAZ11972-Z12358 represent open reading frames
CC (ORFs) of Neisseria meningitidis and N. gonorrhoeae which encode
CC antigenic proteins (see AAY38499-Y38944). The antigenic proteins, their
CC fragments, their nucleic acids and antibodies are used for diagnosis,
CC prevention (as vaccines) or treatment of Neisseria infections,
CC such as meningitis, septicaemia and gonorrhea. Both organisms
CC are closely related. Fragments of the nucleic acids are useful
CC as hybridisation probes and antisense reagents.
XX

SQ Sequence 4407 BP; 1273 A; 1169 C; 1094 G; 871 T; 0 other;

Query Match 100.0%; Score 4407; DB 20; Length 4407;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 4407; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy   2221 accattaccgacgataaagtgattgcttcattgagcaagaccgacatcagaggcaatgtc 2280
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Qy   2461 gcttcggacaatgcttcatttaatctaagcaacaacgccgtacaaaacggcagtctgacg 2520
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Qy   2581 gccgataaggcagtattccattttgaaaacagccgctttaccggaaaaatcagcggcggc 2640
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
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Qy   2641 aaggatacggcattacacttaaaagacagcgaatggacgctgccgtcgggcacggaatta 2700
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Qy   2701 ggcaatttaaaccttgacaacgccaccattacactcaattccgcctatcgacacgatgcg 2760
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RESULT 2
AAZ38917
ID AAZ38917 standard; DNA; 4365 BP.
XX
AC AAZ38917;
XX
DT 21-FEB-2000 (first entry)
XX
DE Neisseria meningitidis strain ATCC13090 BASB006 nucleotide sequence.
XX
KW Neisseria meningitidis; BASB006; diagnosis; bacterial; infection;
KW vaccine; antibiotic; upper respiratory tract infection; meningitis;
KW invasive bacterial disease; bacteraemia; screening; antibacterial; ss.
XX
OS Neisseria meningitidis.
XX
FH Key Location/Qualifiers
FT CDS 1..4365
FT /*tag= a
FT /product= "BASB006"
XX
PN WO9955873-A2.
XX
PD 04-NOV-1999.
XX
PF 20-APR-1999; 99WO-EP02766.
XX
PR 24-APR-1998; 98GB-0008866.
XX
PA (SMIK) SMITHKLINE BEECHAM BIOLOGICALS.
XX
PI Thonnard J;
XX
DR WPI; 2000-052810/04.
DR P-PSDB; AAY56621.
XX
PT Novel polynucleotides and polypeptides from Neisseria meningitis used
PT to prepare vaccines against bacterial infections -
XX
PS Claim 11; Page 84-86; 103pp; English.
XX
CC The present sequence encodes BASB006 isolated from Neisseria meningitidis
CC strain ATCC13090. BASB006 polynucleotides and polypeptides may be
CC employed as research reagents and material for the discovery of
CC treatments and diagnostics for diseases, particularly human diseases.
CC They can be used for diagnosis of disease, staging of disease, or
CC determining response of an infectious organism to drugs. The
CC polynucleotides may be used as a source for hybridisation probes, and for
CC screening of genetic mutations, serotype, organism or strain
CC identification, identification of mutation in BASB013 sequences, and as
CC components of arrays which are useful for diagnostic and prognostic
CC purposes. The polypeptides can be used to produce antibodies. The
CC polypeptides can also be used in vaccine formulations, and to identify
CC agonists and antagonists. The polypeptides, antibodies, agonists and
CC antagonists (which are bacteristatic) are used for the treatment and
CC prevention of diseases such as upper respiratory tract infection,
CC invasive bacterial diseases such as bacteraemia and meningitis, and for
CC the development and screening of antibacterial drugs. They are also used
CC in the prevention of adhesion of bacteria to eukaryotic matrix proteins
CC on in-dwelling devices, or to extracellular proteins on wounds, and to
CC prevent tissue damage and/or block the normal progression of pathogenesis

CC in infections initiated other than by the implantation of in-dwelling
CC devices or by other surgical techniques.
XX
SQ Sequence 4365 BP; 1267 A; 1149 C; 1066 G; 883 T; 0 other;

Query Match 90.7%; Score 3996.2; DB 21; Length 4365;
Best Local Similarity 94.6%; Pred. No. 0;
Matches 4167; Conservative 0; Mismatches 198; Indels 42; Gaps 1;

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Qy      1 atgaaaacaaccgacaaacggacaaccgaaacacaccgcaaagcccctaaaaccggccgc 60
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Qy    121 cgggcgggacacacttatttcggcatcaactaccaatactatcgcgactttgccgaaaat 180
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Qy    361 aatgttgattttggtgcggagggaagcaatcccgatcagcaccgcttttcttaccaaatt 420
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Qy    481 atgccgcgtttgcacaaatttgtcacagatgcagaacctgttgagatgaccagttatatg 540
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Qy    541 gatgggtggaaatacgctgatttaaataaataccctgatcgtgttcgaatcggagcaggc 600
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Qy    601 agacaatattggcggtctgatgaagacgaacccaataaccgcgaaagttcatatcatatt 660
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Qy    661 gcaagcgcatattcttggctcgtcggtggcaatacctttgcacaaaatggatcaggtggt 720
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Qy    721 ggcacagtcaacttaggtagcgaaaaaattaaacatagcccatatggtttttaccaaca 780
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Qy   1681 caagacaaagaatccaccgttaccattacaggcaataaagatattactacaaccggcaat 1740
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          | |||||||||||||||||||||||| ||   |||||| || |  | ||  || |||||
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Qy   1921 tttttcagcggcagaccgacaccgcacgcctacaatcatttaggaagcgggtggtcaaaa 1980
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1921 tttttcagcggcagaccgacaccgcacgcctacaatcatttaggaagcgggtggtcaaaa 1980

Qy   1981 atggaaggtatcccacaaggagaaatcgtgtgggacaacgattggatcgaccgcacattt 2040
          |||||||||||||||||||||||||||||||||||||||||||||| |||||| ||||| |||
Db   1981 atggaaggtatcccacaaggagaaatcgtgtgggacaacgactggatcaaccgcacgttt 2040
```


Qy 2041 aaagcggaaaacttccatattcagggcggacaagcggtggtttcccgcaatgttgccaaa 2100
Db 2041 aaagcggaaaatttccatattcagggcgggcaggcggtgatttcccgcaatgttgccaaa 2100
Qy 2101 gtggaaggcgattggcatttaagcaatcacgcccaagcagttttcggtgtcgcaccgcat 2160
Db 2101 gtggaaggcgattggcatttgagcaatcacgcccaagcagtttttggtgtcgcaccgcat 2160
Qy 2161 caaagccacacaatctgtacacgttcggactggacgggtctgacaagttgtaccgaaaaa 2220
Db 2161 caaagccacacaatctgtacacgttcggactggacgggtctgacaaattgtgtcgaaaaa 2220
Qy 2221 accattaccgacgataaagtgattgcttcattgagcaagaccgacatcagaggcaatgtc 2280
Db 2221 accattaccgacgataaagtgattgcttcattgactaagaccgacatcagcggcaatgtc 2280
Qy 2281 agccttgccgatcacgctcatttaaatctcacaggacttgccacactcaacggcaatctt 2340
Db 2281 agccttgccgatcacgctcatttaaatctcacagggcttgccacactcaacggcaatctt 2340
Qy 2341 agtgcaggcggagacacgcactatacggttacgcgcaacgccacccaaaacggcaacctc 2400
Db 2341 agtgcaaatggcgatacacgttatacagtcagccacaacgccacccaaaacggcgacctt 2400
Qy 2401 agcctcgtgggcaatgcccaagcaacatttaatcaagccacattaaacggcaacacatcg 2460
Db 2401 agcctcgtgggcaatgcccaagcaacatttaatcaagccacattaaacggcaacacatcg 2460
Qy 2461 gcttcggacaatgcttcatttaatctaagcaacaacgccgtacaaaacggcagtctgacg 2520
Db 2461 gcttcgggcaatgcttcatttaatctaagcaacaacgccgtacaaaacggcagtctgacg 2520
Qy 2521 ctttccgacaacgctaaggcaaacgtaagccattccgcactcaacggcaatgtctcccta 2580
Db 2521 ctttccggcaacgctaaggcaaacgtaagccattccgcactcaacggtaatgtctcccta 2580
Qy 2581 gccgataaggcagtattccattttgaaaacagccgctttaccggaaaaatcagcggcggc 2640
Db 2581 gccgataaggcagtattccattttgaaagcagccgctttaccggacaaatcagcggcagc 2640
Qy 2641 aaggatacggcattacacttaaaagacagcgaatggacgctgccgtcgggcacggaatta 2700
Db 2641 aaggatacggcattacacttaaaagacagcgaatggacgctgccgtcaggcacggaatta 2700
Qy 2701 ggcaatttaaaccttgacaacgccaccattacactcaattccgcctatcgacacgatgcg 2760
Db 2701 ggcaatttaaaccttgacaacgccaccattacactcaattccgcctatcgccacgatgcg 2760
Qy 2761 gcaggcgcgcaaaccggcagtgcggcagatgcgccgcgccgccgttcgcgccgttcccta 2820
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Qy 2941 aaattgaagctggcggaaagttccgaaggcacttacaccttggctgtcaacaataccggc 3000
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Qy 3001 aacgaacccgtaagtctcgagcaattgacggtagtggaaggaaaagacaacacaccgctg 3060
Db 3001 aacgaacccgtaagcctcgatcaattgacggtagtggaagggaaagacaacaaaccgctg 3060
Qy 3061 tccgaaaatcttaatttcaccctgcaaaacgaacacgtcgatgccggcgcatggcgttat 3120
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Qy 3121 cagcttatccgcaaagacggcgagttccgcctgcataatccggtcaaagaacaagagctt 3180
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Qy 3181 tccgacaaactcggcaaggcgggagaaacagaggccgccttgacggcaaaacaggcacaa 3240
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Qy 3241 cttgccgccaaacaacaggcggaaaaagacaacgcgcaaagccttgacgcgctgattgcg 3300
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Qy 4021 ttcggcatcgaaccgcacatcggcgcaacgcgctatttcgtccaaaaagcggattaccga 4080
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Qy 4081 tacgaaaacgtcaatatcgccaccccgggccttgcattcaaccgctaccgcgcgggcatt 4140
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Qy 4141 aaggcagattattcattcaaaccggcgcaacacatttccatcacgccttatttgagcctg 4200
Db 4099 aaggcagattattcattcaaaccggcgcaacacatttccatcacgccttatttgagcctg 4158
Qy 4201 tcctataccgatgccgcttccggcaaagtccgaacgcgcgtcaataccgccgtattggcg 4260

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Db   4159 tcctataccgatgccgcttcgggcaaagtccgaacgcgcgtcaataccgccgtattggct 4218

Qy   4261 caggatttcggcaaaacccgcagtgcggaatggggcgtaaacgccgaaatcaaaggtttc 4320
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   4219 caggatttcggcaaaacccgcagtgcggaatggggcgtaaacgccgaaatcaaaggtttc 4278

Qy   4321 acgctgtccctccacgctgccgccgccaaggggccgcaattggaagcgcagcacagcgcg 4380
          |||||||||||||||||||||||||||| || |||||| |||| |||||| |||||||||
Db   4279 acgctgtccctccacgctgccgccgccaaaggcccgcaactggaagcgcaacacagcgcg 4338

Qy   4381 ggcatcaaattaggctaccgctggtaa 4407
          |||||||||||||||||||||||||||
Db   4339 ggcatcaaattaggctaccgctggtaa 4365


RESULT   3
AAZ12251
ID   AAZ12251 standard; DNA; 4374 BP.
XX
AC   AAZ12251;
XX
DT   08-OCT-1999  (first entry)
XX
DE   Neisseria meningitidis complete ORF1 sequence.
XX
KW   Neisseria meningitidis; Neisseria gonorrhoeae; antigen; vaccine;
KW   treatment; Neisseria infection; meningitis; septicaemia; gonorrhea; ss.
XX
OS   Neisseria meningitidis.
XX
PN   WO9924578-A2.
XX
PD   20-MAY-1999.
XX
PF   09-OCT-1998;   98WO-IB01665.
XX
PR   01-SEP-1998;   98GB-0019016.
PR   06-NOV-1997;   97GB-0023516.
PR   14-NOV-1997;   97GB-0024190.
PR   18-NOV-1997;   97GB-0024386.
PR   27-NOV-1997;   97GB-0025158.
PR   10-DEC-1997;   97GB-0026147.
PR   14-JAN-1998;   98GB-0000759.
XX
PA   (CHIR-) CHIRON SPA.
XX
PI   Grandi G,  Masignani V,  Pizza M,  Rappuoli R,  Scarlato V;
XX
DR   WPI; 1999-327407/27.
DR   P-PSDB; AAY38823.
XX
PT   Proteins from Neisseria meningitidis and N. gonorrhoeae useful for
PT   diagnosis, treatment and prevention of infection
XX
PS   Claim 9; Page 360-361; 524pp; English.
XX
CC   Nucleotide sequences AAZ11972-Z12358 represent open reading frames
CC   (ORFs) of Neisseria meningitidis and N. gonorrhoeae which encode
CC   antigenic proteins (see AAY38499-Y38944). The antigenic proteins, their
CC   fragments, their nucleic acids and antibodies are used for diagnosis,
CC   prevention (as vaccines) or treatment of Neisseria infections,
CC   such as meningitis, septicaemia and gonorrhea. Both organisms
CC   are closely related. Fragments of the nucleic acids are useful
CC   as hybridisation probes and antisense reagents.
XX
SQ   Sequence 4374 BP; 1266 A; 1163 C; 1066 G; 879 T; 0 other;


  Query Match             89.7%;  Score 3954.8;  DB 20;  Length 4374;
  Best Local Similarity   94.0%;  Pred. No. 0;
  Matches 4153;  Conservative    0;  Mismatches  212;  Indels   51;  Gaps    2;

Qy       1 atgaaaacaaccgacaaacggacaaccgaaacacaccgcaaagcccctaaaaccggccgc 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||| ||||||||||||
Db       1 atgaaaacaaccgacaaacggacaaccgaaacacaccgcaaagccccgaaaaccggccgc 60

Qy      61 atccgcttctcgcccgcttacttagccatatgcctgtcgttcggcattctgccccaagcc 120
           ||||||||||||| |||||||||||||||||||||||||||||||||||||||| |||||||||
Db      61 atccgcttctcgcctgcttacttagccatatgcctgtcgttcggcattcttccccaagcc 120

Qy     121 cgggcgggacacacttatttcggcatcaactaccaatactatcgcgactttgccgaaaat 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     121 tgggcgggacacacttatttcggcatcaactaccaatactatcgcgactttgccgaaaat 180

Qy     181 aaaggcaagtttgcagtcggggcgaaagatattgaggtttacaacaaaaaaggggagttg 240
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     181 aaaggcaagtttgcagtcggggcgaaagatattgaggtttacaacaaaaaaggggagttg 240

Qy     241 gtcggcaaatcgatgacgaaagccccgatgattgatttttctgtggtatcgcgtaacggc 300
           |||||||||||| ||||| ||||||||||||||||||||||||||||||||| ||||||||||
Db     241 gtcggcaaatcaatgacaaaagccccgatgattgatttttctgtggtgtcgcgtaacggc 300

Qy     301 gtggcggcattggcgggcgatcaatatattgtgagcgtggcacataacggcggctataac 360
           |||||||||||||| ||||||||||||||||||||||||||||||||||||||||||||||
Db     301 gtggcggcattggtgggcgatcaatatattgtgagcgtggcacataacggcggctataac 360

Qy     361 aatgttgattttggtgcggagggaagcaatcccgatcagcaccgcttttcttaccaaatt 420
           || |||||||||||||||| ||||| |||||||||| || || ||| ||||  |||||
Db     361 aacgttgattttggtgcggaaggaagaaatcccgatcaacatcgttttacttataaaatt 420

Qy     421 gtgaaaagaaataattataaagcagggactaacggccatccttatggcggcgattatcat 480
           |||||| | ||||||||||||||||||||||| ||||||||||||||||||||||||||||
Db     421 gtgaaacggaataattataaagcagggactaaaggccatccttatggcggcgattatcat 480

Qy     481 atgccgcgtttgcacaaatttgtcacagatgcagaacctgttgagatgaccagttatatg 540
           |||||||||||||| ||||||||||||||||||||||||||||| ||||||||||||||||
Db     481 atgccgcgtttgcataaatttgtcacagatgcagaacctgttgaaatgaccagttatatg 540

Qy     541 gatgggtggaaatacgctgatttaaataaataccctgatcgtgttcgaatcggagcaggc 600
           |||||| |||||||    |||  |||||| |||||||| |||||||| || || ||||||
Db     541 gatgggcggaaatatatcgatcaaaataattaccctgaccgtgttcgtattggggcaggc 600

Qy     601 agacaatattggcggtctgatgaagacgaacccaataaccgcgaaagttcatatcatatt 660
           || |||||||||| |||||||||| || ||||||||||||||||||||||||||||||||
Db     601 aggcaatattggcgatctgatgaagatgagcccaataaccgcgaaagttcatatcatatt 660

Qy     661 gcaagcgcatattcttggctcgtcggtggcaataccttgcacaaaatggatcaggtggt 720
           ||||| || |||||||||||||| ||||||||||||||||||||||||||||||||||||
Db     661 gcaagtgcgtattcttggctcgttggtggcaataccttgcacaaaatggatcaggtggt 720

Qy     721 ggcacagtcaacttaggtagcgaaaaaattaaacatagcccatatggtttttaccaaca 780
           |||||||||||||||||| ||||||||||||||||||||||||||||||||||||||||||
Db     721 ggcacagtcaacttaggtagtgaaaaaattaaacatagcccatatggtttttaccaaca 780

Qy     781 ggaggctcatttggcgacagtggctcaccaatgtttatctatgatgcccaaaagcaaaag 840
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     781 ggaggctcatttggcgacagtggctcaccaatgtttatctatgatgcccaaaagcaaaag 840

Qy     841 tggttaattaatggggtattgcaaacaggcaacccctatataggaaaaagcaatggcttc 900
           |||||||||||||||||||||||| ||||||||||||||||||||||||||||||||||||
Db     841 tggttaattaatggggtattgcaaacgggcaacccctatataggaaaaagcaatggcttc 900

Qy     901 cagctagttcgtaaagattggttctatgatgaaatctttgctggagatacccattcagta 960
           ||||| ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     901 cagctggttcgtaaagattggttctatgatgaaatctttgctggagatacccattcagta 960

Qy     961 ttctacgaaccacatcaaaatgggaaatacttttttaacgacaataataatggcgcagga 1020
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Db     961 ttctacgaaccacgtcaaaatgggaaatactcttttaacgacgataataatggcacagga 1020

Qy    1021 aaaatcgatgccaaacataaacactattctctaccttatagattaaaaacacgaaccgtt 1080
           |||||| |||||||||| ||||| ||||||| ||| ||||||||||||||||||||||||
Db    1021 aaaatcaatgccaaacatgaacacaattctctgcctaatagattaaaaacacgaaccgtt 1080

Qy    1081 caattgtttaatgtttctttatccgagacagcaagagaacctgtttatcatgctgcaggt 1140
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
```



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Qy   3292 ctgattgcggccgggcgcaatgccaccgaaaaggcagaaagtgttgccgaaccggccccgg 3351
          |||||||||||||||||| |||||  |||||||| ||||||| |||||||||||||||||||
Db   3259 ctgattgcggccgggcgcgatgccgtcgaaaagacagaaagcgttgccgaaccggccccgg 3318

Qy   3352 caggcaggcggggaaaatgccggcattatgcaggcggaggaagagaaaaaacgggtgcag 3411
          ||||||||||||||||| ||||||||||||||||||||||||||||||||||||||||||
Db   3319 caggcaggcggggaaaatgtcggcattatgcaggcggaggaagagaaaaaacgggtgcag 3378

Qy   3412 gcggataaagacaccgccttggcgaaacagcgcgaagcggaaacccggccggctaccacc 3471
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3379 gcggataaagacaccgccttggcgaaacagcgcgaagcggaaacccggccggctaccacc 3438

Qy   3472 gccttcccccgcgcccgccgcgcccgccgggatttgccgcaaccgcagccccaaccgcaa 3531
          |||||||||||||||||||||||||||||||||||||||| ||| ||||||||||||
Db   3439 gccttcccccgcgcccgccgcgcccgccgggatttgccgcaactgcaaccccaaccgcag 3498

Qy   3532 ccccaaccgcagcgcgacctgatcagccgttatgccaatagcggtttgagtgaattttcc 3591
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Db   3499 ccccaaccgcagcgcgacctgatcagccgttatgccaatagcggtttgagtgaattttcc 3558

Qy   3592 gccacgctcaacagcgttttcgccgtacaggacgaattggaccgcgtgtttgccgaagac 3651
          |||||||||||||||||||||||||||||||||||| |||||||| ||||||||||||
Db   3559 gccacgctcaacagcgttttcgccgtacaggacgaattagaccgcgtatttgccgaagac 3618

Qy   3652 cgccgcaacgccgtttggacaagcggcatccgggacaccaaacactaccgttcgcaagat 3711
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
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Qy   3712 ttccgcgcctaccgccaacaaaccgacctgcgccaaatcggtatgcagaaaaacctcggc 3771
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Qy   3772 agcgggcgcgtcggcatcctgttttcgcacaaccggaccggaaacaccttcgacgacggc 3831
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Db   3739 agcgggcgcgtcggcatcctgttttcgcacaaccggaccgaaaacaccttcgacgacggc 3798

Qy   3832 atcggcaactcggcacggcttgcccacggtgccgttttcgggcaatacggcatcggcagg 3891
          |||||||||||||||||||||||||||| |||||||||||||||||||||||||| ||||
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Qy   3892 ttcgacatcggcatcagcgcgggcgcgggttttagtagcggcagcctttcagacggcatc 3951
          ||| |||||||||||||||||||||||||||||| ||||||||||||||||||||||||
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Qy   3952 agaggcaaaatccgccgccgcgtgctgcattacggcattcaggcaagataccgcgcaggt 4011
          |||||||||||||||||||||||||||||||||||||||||||| |||||||||| |||
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Qy   4012 ttcggcggattcggcatcgaaccgcacatcggcgcaacgcgctatttcgtccaaaaagcg 4071
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3979 ttcggcggattcggcatcgaaccgcacatcggcgcaacgcgctatttcgtccaaaaagcg 4038

Qy   4072 gattaccgatacgaaaacgtcaatatcgccaccccgggccttgcattcaaccgctaccgc 4131
          |||||||| |||||||||||||||||||||||| ||||||||||||||||||||||||||
Db   4039 gattaccgctacgaaaacgtcaatatcgccaccccggccttgcattcaaccgctaccgc 4098

Qy   4132 gcgggcattaaggcagattattcattcaaaccggcgcaacacatttccatcacgccttat 4191
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   4099 gcgggcattaaggcagattattcattcaaaccggcgcaacacatttccatcacgccttat 4158

Qy   4192 ttgagcctgtcctataccgatgccgcttccggcaaagtccgaacgcgcgtcaataccgcc 4251
          |||||||||||||||||||||||||||||| ||||||||||||| ||||||||||||||
Db   4159 ttgagcctgtcctataccgatgccgcttcgggcaaagtccgaacacgcgtcaataccgcc 4218

Qy   4252 gtattggcgcaggatttcggcaaaacccgcagtgcggaatggggcgtaaacgccgaaatc 4311
          |||||||| ||||||||||||||||||||||||||||||||||||||||||||||||||
Db   4219 gtattggctcaggatttcggcaaaacccgcagtgcggaatggggcgtaaacgccgaaatc 4278

Qy   4312 aaaggtttcacgctgtccctccacgctgccgccgccaaggggccgcaattggaagcgcag 4371
          |||||||||||||||||||||||||||||||||||| || |||||| ||||||||||||
Db   4279 aaaggtttcacgctgtccctccacgctgccgccgccaaaggcccgcaactggaagcgcaa 4338

Qy   4372 cacagcgcgggcatcaaattaggctaccgctggtaa 4407
```

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          ||||||||||||||||||||||||||||||||||||
Db   4339 cacagcgcgggcatcaaattaggctaccgctggtaa 4374
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RESULT   4
AAF21587
ID   AAF21587 standard; DNA; 4374 BP.
XX
AC   AAF21587;
XX
DT   13-MAR-2001  (first entry)
XX
DE   N. meningitidis partial DNA sequence orf1-1.seq SEQ ID NO:86.
XX
KW   Neisseria meningitidis; Neisseria gonorrheae; immunogenic; vaccine;
KW   diagnosis; antigen; detection; infection; gene therapy; antibacterial;
KW   ds.
XX
OS   Neisseria meningitidis.
XX
PN   WO200066791-A1.
XX
PD   09-NOV-2000.
XX
PF   08-MAR-2000; 2000WO-US05928.
XX
PR   30-APR-1999;   99US-0132068.
PR   08-OCT-1999;   99WO-US23573.
PR   28-FEB-2000; 2000GB-0004695.
XX
PA   (CHIR ) CHIRON CORP.
PA   (GENO-) INST GENOMIC RES.
XX
PI   Pizza M,  Hickey E,  Peterson J,  Tettelin H,  Venter JC,  Masignani V;
PI   Galeotti C,  Mora M,  Ratti G,  Scarselli M,  Scarlato V,  Rappuoli R;
PI   Frazer CM,  Grandi G;
XX
DR   WPI; 2000-647603/62.
DR   P-PSDB; AAB58592.
XX
PT   Neisseria meningitidis B full length genome sequence and open reading
PT   frames are used to detect, treat and prevent Neisserial infections -
XX
PS   Example 1; Page 112-114; 692pp; English.
XX
CC   The present invention describes the full length genome of
CC   Neisseria meningitidis B (NMB). The sequences in AAF21544 and AAF21607
CC   to AAF21613 represent fragments of the NMB genomic sequence, as the
CC   sequence was too long to go in a record on its own it was split into 8
CC   sequences which overlap each other at the beginning and end of each
CC   sequence by 49980 bp (i.e. the last 49980 bp of AAF21544 is repeated at
CC   the beginning  of AAF21607, the last 49980 bp of AAF21607 are repeated at
CC   the beginning of AAF21608, and so on). AAF21545 to AAF21588 encode the
CC   Neisseria proteins given in AAB58550 to AAB58593, and AAF21589 to
CC   AAF21606 represent PCR primers which are used in the exemplification of
CC   the present invention. The NMB genome and fragments from it have
CC   antibacterial activity, and can be used in vaccines and gene therapy.
CC   Neisseria nucleic acids, proteins and/or antibodies which binds to the
CC   proteins can be used in compositions for treating or preventing infection
CC   due to Neisserial bacteria or as a diagnostic reagent for detecting the
CC   presence of Neisserial bacteria or of antibodies raised to Neisserial
CC   bacteria. Computers, computer memory, computer storage medium or computer
CC   databases can be used in a search to identify open reading frames (ORFs)
CC   or coding sequences within the NMB genome. The DNA sequences provide
CC   further opportunities to find antigenic or immunogenic proteins which are
CC   more effective in vaccines than the outer membrane proteins currently
CC   used.
XX
SQ   Sequence 4374 BP; 1266 A; 1163 C; 1066 G; 879 T; 0 other;

  Query Match             89.7%;  Score 3954.8;  DB 21;  Length 4374;
  Best Local Similarity   94.0%;  Pred. No. 0;
```

Matches 4153; Conservative 0; Mismatches 212; Indels 51; Gaps 2;

```
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Db      1 atgaaaacaaccgacaaacggacaaccgaaacacaccgcaaagccccgaaaaccggccgc 60

Qy     61 atccgcttctcgcccgcttacttagccatatgcctgtcgttcggcattctgccccaagcc 120
Db     61 atccgcttctcgcctgcttacttagccatatgcctgtcgttcggcattcttccccaagcc 120

Qy    121 cgggcgggacacacttatttcggcatcaactaccaatactatcgcgactttgccgaaaat 180
Db    121 tgggcgggacacacttatttcggcatcaactaccaatactatcgcgactttgccgaaaat 180

Qy    181 aaaggcaagtttgcagtcggggcgaaagatattgaggtttacaacaaaaaaggggagttg 240
Db    181 aaaggcaagtttgcagtcggggcgaaagatattgaggtttacaacaaaaaaggggagttg 240

Qy    241 gtcggcaaatcgatgacgaaagccccgatgattgatttttctgtggtatcgcgtaacggc 300
Db    241 gtcggcaaatcaatgacaaaagccccgatgattgatttttctgtggtgtcgcgtaacggc 300

Qy    301 gtggcggcattggcgggcgatcaatatattgtgagcgtggcacataacggcggctataac 360
Db    301 gtggcggcattggtgggcgatcaatatattgtgagcgtggcacataacggcggctataac 360

Qy    361 aatgttgattttggtgcggagggaagcaatcccgatcagcaccgcttttcttaccaaatt 420
Db    361 aacgttgattttggtgcggaaggaagaaatcccgatcaacatcgtttttacttataaaatt 420

Qy    421 gtgaaaagaaataattataaagcagggactaacggccatccttatggcggcgattatcat 480
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Qy    481 atgccgcgtttgcacaaatttgtcacagatgcagaacctgttgagatgaccagttatatg 540
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Qy    541 gatgggtggaaatacgctgatttaaataaataccctgatcgtgttcgaatcggagcaggc 600
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Qy    601 agacaatattggcggtctgatgaagacgaacccaataaccgcgaaagttcatatcatatt 660
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Qy    661 gcaagcgcatattcttggctcgtcggtggcaataccttgcacaaaatggatcaggtggt 720
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Qy    721 ggcacagtcaacttaggtagcgaaaaaattaaacatagcccatatggtttttaccaaca 780
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Qy    901 cagctagttcgtaaagattggttctatgatgaaatctttgctggagatacccattcagta 960
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Db   1021 aaaatcaatgccaaacatgaacacaattctctgcctaatagattaaaaacacgaaccgtt 1080

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Db   1141 ggtgtcaacagttatcgacccagactgaataatggagaaaatatttccttttattgacgaa 1200

Qy   1201 ggaaaaggtgaattgatacttaccagcaacatcaaccaaggcgcgggcggtttgtatttt 1260
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Db   1381 aaaatcggcaaaggcacgctgcacgttcaagccaaaggggaaaaccaaggctcgatcagc 1440

Qy   1441 gtgggcgacggtaaagtcatcttagatcagcaggcggacgatcaaggcaaaaaacaagcc 1500
Db   1441 gtgggcgacggtacagtcattttggatcagcaggcagacgataaaggcaaaaaacaagcc 1500

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Db   1501 tttagtgaaatcggcttggtcagcggcaggggtacggtgcaactgaatgccgataatcag 1560

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Db   1561 ttcaaccccgacaaactctatttcggctttcgcggcggacgtttggatttaaacgggcat 1620

Qy   1621 tcgctttcgttccaccgcattcaaaataccgatgaaggggcgatgattgtcaaccacaat 1680
Db   1621 tcgctttcgttccaccgtattcaaaataccgatgaaggggcgatgattgtcaaccacaat 1680

Qy   1681 caagacaaagaatccaccgttaccattacaggcaataaagatattactacaaccggcaat 1740
Db   1681 caagacaaagaatccaccgttaccattacaggcaataaagatattgctacaaccggcaat 1740

Qy   1741 aacaacaacttggatagcaaaaaagaaattgcctacaacggttggtttggcgagaaagat 1800
Db   1741 aacaacagcttggatagcaaaaaagaaattgcctacaacggttggtttggcgagaaagat 1800

Qy   1801 gcaaccaaaacgaacgggcggctcaatctgaattaccaaccggaagaagcggatcgcact 1860
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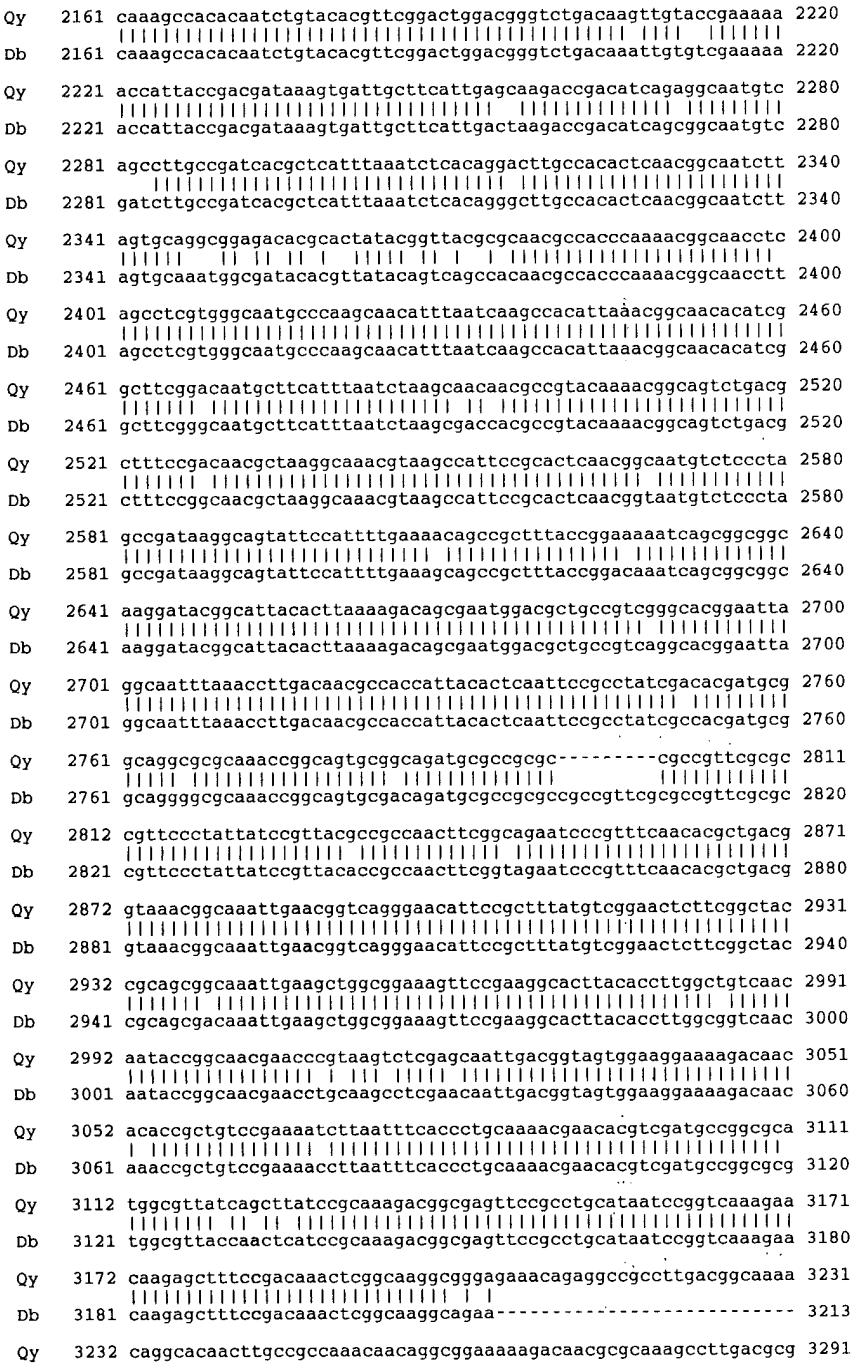
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Db   1861 ctgctgctttccggcggaacaaatttaaacggcaacatcacgcaaacaaacggcaaactg 1920

Qy   1921 tttttcagcggcagaccgacaccgcacgcctacaatcatttaggaagcgggtggtcaaaa 1980
Db   1921 tttttcagcggcagaccaacaccgcacgcctacaatcatttaaacgaccattggtcgcaa 1980

Qy   1981 atggaaggtatcccacaaggagaaatcgtgtgggacaacgattggatcgaccgcacattt 2040
Db   1981 aaagagggcattcctcgcggggaaatcgtgtgggacaacgactggatcaaccgcacattt 2040

Qy   2041 aaagcggaaaacttccatattcagggcggacaagcggtggtttcccgcaatgttgccaaa 2100
Db   2041 aaagcggaaaacttccaaattaaaggcggacaggcggtggtttcccgcaatgttgccaaa 2100

Qy   2101 gtggaaggcgattggcatttaagcaatcacgcccaagcagttttcggtgtcgcaccgcat 2160
Db   2101 gtgaaaggcgattggcatttgagcaatcacgcccaagcagttttggtgtcgcaccgcat 2160
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Qy 2221 accattaccgacgataaagtgattgcttcattgagcaagaccgacatcagaggcaatgtc 2280
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Db 2401 agcctcgtgggcaatgcccaagcaacatttaatcaagccacattaaacggcaacacatcg 2460
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Db 2461 gcttcgggcaatgcttcatttaatctaagcgaccacgccgtacaaaacggcagtctgacg 2520
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Db 2641 aaggatacggcattacacttaaaagacagcgaatggacgctgccgtcaggcacggaatta 2700
Qy 2701 ggcaatttaaaccttgacaacgccaccattacactcaattccgcctatcgacacgatgcg 2760
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Qy 2761 gcaggcgcgcaaaccggcagtgcggcagatgcgccgcgc---------cgccgttcgcgc 2811
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Qy 2872 gtaaacggcaaattgaacggtcagggaacattccgctttatgtcggaactcttcggctac 2931
Db 2881 gtaaacggcaaattgaacggtcagggaacattccgctttatgtcggaactcttcggctac 2940
Qy 2932 cgcagcggcaaattgaagctggcggaaagttccgaaggcacttacaccttggctgtcaac 2991
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Qy 2992 aataccggcaacgaacccgtaagtctcgagcaattgacggtagtggaaggaaaagacaac 3051
Db 3001 aataccggcaacgaacctgcaagcctcgaacaattgacggtagtggaaggaaaagacaac 3060
Qy 3052 acaccgctgtccgaaaatcttaatttcaccctgcaaaacgaacacgtcgatgccggcgca 3111
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Db 3121 tggcgttaccaactcatccgcaaagacggcgagttccgcctgcataatccggtcaaagaa 3180
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          ||||||||||||||||||||||||||||||||||||
Db   4339 cacagcgcgggcatcaaattaggctaccgctggtaa 4374


RESULT   5
AAA81302
ID   AAA81302 standard; DNA; 4374 BP.
XX
AC   AAA81302;
XX
DT   04-DEC-2000  (first entry)
XX
DE   N. meningitidis partial DNA sequence orf1-1.seq SEQ ID NO:1046.
XX
KW   Neisseria meningitidis; Neisseria gonorrheae; genome; immunogenic;
KW   antigen; vaccine; diagnosis; infection; antibacterial; identification;
KW   Meningococcus B; MenB; ds.
XX
OS   Neisseria meningitidis.
XX
PN   WO200022430-A2.
XX
PD   20-APR-2000.
XX
PF   08-OCT-1999;   99WO-US23573.
XX
PR   09-OCT-1998;   98US-0103794.
PR   30-APR-1999;   99US-0132068.
XX
PA   (CHIR ) CHIRON CORP.
XX
PI   Frazer CM,  Hickey E,  Peterson J,  Tettelin H,  Venter JC;
PI   Masignani V,  Galeotti C,  Mora M,  Ratti G,  Scarselli M,  Scarlato V;
PI   Rappuoli R,  Pizza M;
XX
DR   WPI; 2000-318079/27.
DR   P-PSDB; AAB25662.
XX
PT   Isolated nucleotide sequences of Neisseria meningitidis which can be
PT   used in the diagnosis and treatment of N. meningitidis infection and
PT   other Neisserial infections, for example, N.gonorrhoea -
XX
PS   Example 1; Page 112-113; 1760pp; English.
XX
CC   The present invention describes methods of obtaining immunogenic
CC   proteins from Neisseria genomic sequences. AAA81453 to AAA82414
CC   represent specifically claimed Neisseria meningitidis genomic DNA
CC   sequences; AAA81260 to AAA81303 and AAB25620 to AAB25663 represent
CC   Neisseria DNA sequences and their corresponding proteins; AAA81254 to
CC   AAA81259 and AAA81304 to AAA81321 represent PCR primers used in the
CC   isolation of Neisseria meningitidis DNA sequences; and AAA81322 to
CC   AAA81452 represent Neisseria meningitidis MenB polynucleotide ORF
CC   sequences, which are all used in the exemplification of the present
CC   invention. The nucleic acid sequences, protein sequences, and antibodies
CC   against them, can be used in the manufacture of a composition. The
CC   composition can be used as a medicament (or in the manufacture of a
CC   medicament) for treating, preventing or diagnosing infection due to
CC   Neisserial bacteria. For example, some of the identified proteins could
CC   be components of vaccines against Meningococcus B; against all serotypes;
CC   and/or against all pathogenic Neissariae. Identification of sequences
CC   from the bacterium will also facilitate production of biological probes,
CC   particularly organism-specific probes. Attempts to make efficacious
CC   Meningococcus B vaccines have failed mainly due to antigen tolerance.
CC   Multivalent vaccines have also been tried but none have successfully
CC   overcome antigenic variability. The provision of further, complete
CC   sequences may provide an opportunity to identify secreted or surface
CC   exposed proteins that may be presumed targets for the immune system and
CC   which are not antigenically variable or at least more conserved than
CC   other more variable regions.
XX

SQ   Sequence 4374 BP; 1266 A; 1163 C; 1066 G; 879 T; 0 other;

  Query Match             89.7%;  Score 3954.8;  DB 21;  Length 4374;
  Best Local Similarity   94.0%;  Pred. No. 0;
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Qy      61 atccgcttctcgcccgcttacttagccatatgcctgtcgttcggcattctgccccaagcc 120
           ||||||||||||||| ||||||||||||||||||||||||||||||||||| |||||||||
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Qy     121 cgggcgggacacacttatttcggcatcaactaccaatactatcgcgactttgccgaaaat 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     121 tgggcgggacacacttatttcggcatcaactaccaatactatcgcgactttgccgaaaat 180

Qy     181 aaaggcaagtttgcagtcggggcgaaagatattgaggtttacaacaaaaaaggggagttg 240
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     181 aaaggcaagtttgcagtcggggcgaaagatattgaggtttacaacaaaaaaggggagttg 240

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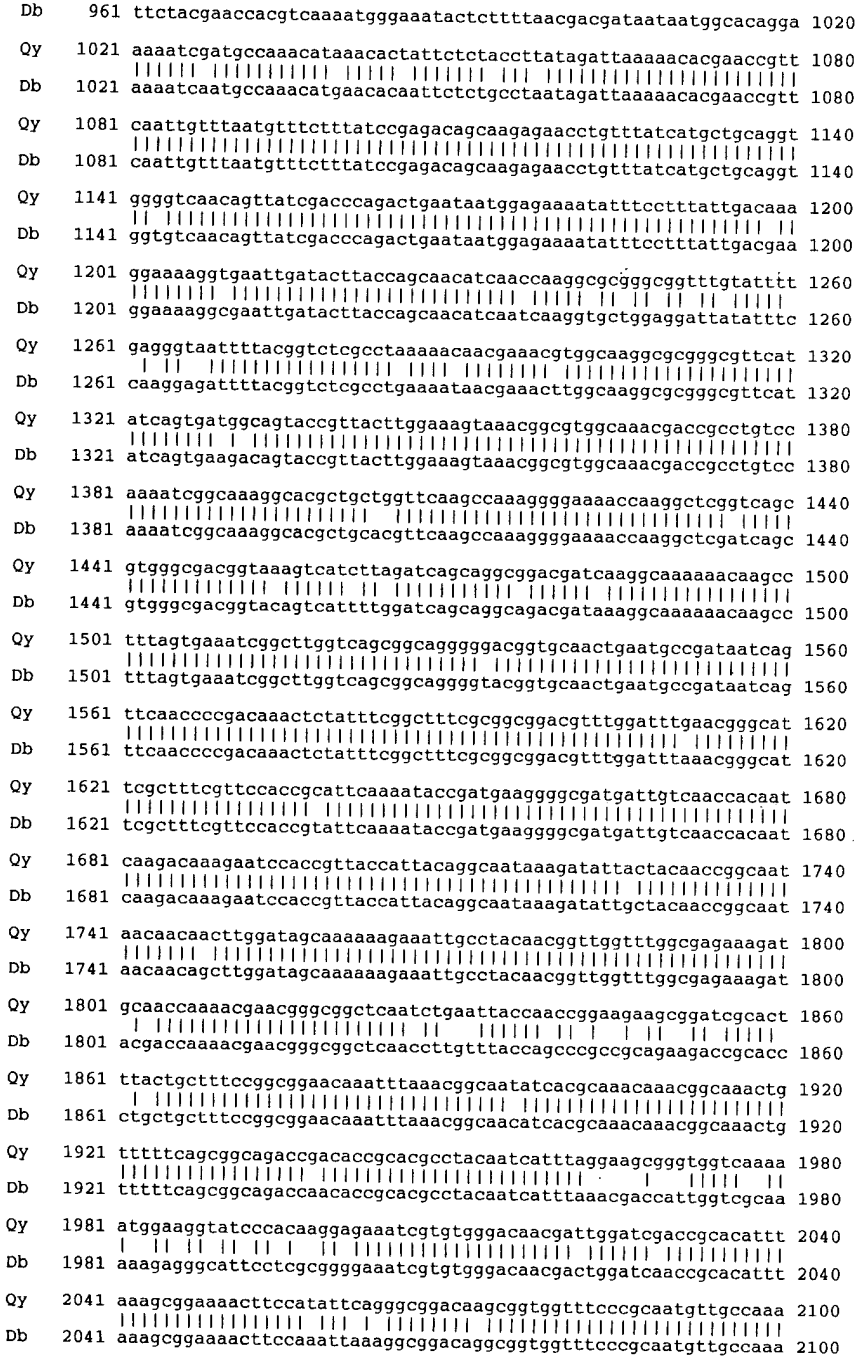
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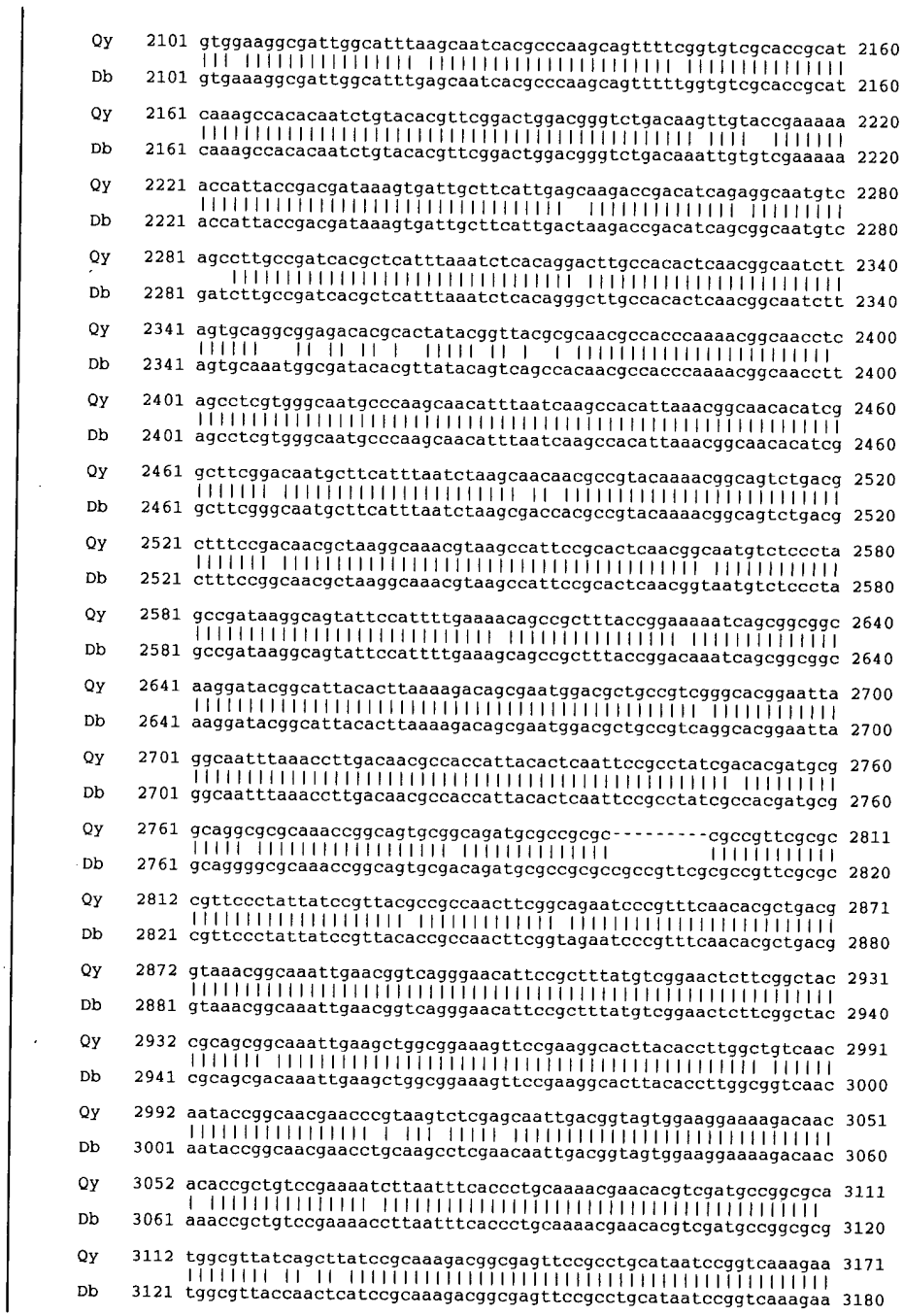
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RESULT 6
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DT 04-DEC-2000 (first entry)
XX
DE N. meningitidis partial DNA sequence gnm_25 SEQ ID NO:25.
XX
KW Neisseria meningitidis; Neisseria gonorrheae; genome; immunogenic;
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XX
OS Neisseria meningitidis.
XX
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XX
PD 20-APR-2000.
XX
PF 08-OCT-1999; 99WO-US23573.
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XX
DR WPI; 2000-318079/27.
XX
PT Isolated nucleotide sequences of Neisseria meningitidis which can be
PT used in the diagnosis and treatment of N. meningitidis infection and
PT other Neisserial infections, for example, N.gonorrhoea -
XX
PS Claim 7; Page 524-531; 1760pp; English.
XX
CC The present invention describes methods of obtaining immunogenic
CC proteins from Neisseria genomic sequences. AAA81453 to AAA82414
CC represent specifically claimed Neisseria meningitidis genomic DNA
CC sequences; AAA81260 to AAA81303 and AAB25620 to AAB25663 represent
CC Neisseria DNA sequences and their corresponding proteins; AAA81254 to
CC AAA81259 and AAA81304 to AAA81321 represent PCR primers used in the
CC isolation of Neisseria meningitidis DNA sequences; and AAA81322 to
CC AAA81452 represent Neisseria meningitidis MenB polynucleotide ORF
CC sequences, which are all used in the exemplification of the present
CC invention. The nucleic acid sequences, protein sequences, and antibodies
CC against them, can be used in the manufacture of a composition. The
CC composition can be used as a medicament (or in the manufacture of a
CC medicament) for treating, preventing or diagnosing infection due to
CC Neisserial bacteria. For example, some of the identified proteins could
CC be components of vaccines against Meningococcus B; against all serotypes;
CC and/or against all pathogenic Neissariae. Identification of sequences
CC from the bacterium will also facilitate production of biological probes,
CC particularly organism-specific probes. Attempts to make efficacious
CC Meningococcus B vaccines have failed mainly due to antigen tolerance.
CC Multivalent vaccines have also been tried but none have successfully
CC overcome antigenic variability. The provision of further, complete
CC sequences may provide an opportunity to identify secreted or surface

CC exposed proteins that may be presumed targets for the immune system and
CC which are not antigenically variable or at least more conserved than
CC other more variable regions.
XX
SQ Sequence 26778 BP; 6602 A; 7008 C; 6846 G; 6318 T; 4 other;

Query Match 89.7%; Score 3954.8; DB 21; Length 26778;
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Matches 4153; Conservative 0; Mismatches 212; Indels 51; Gaps 2;

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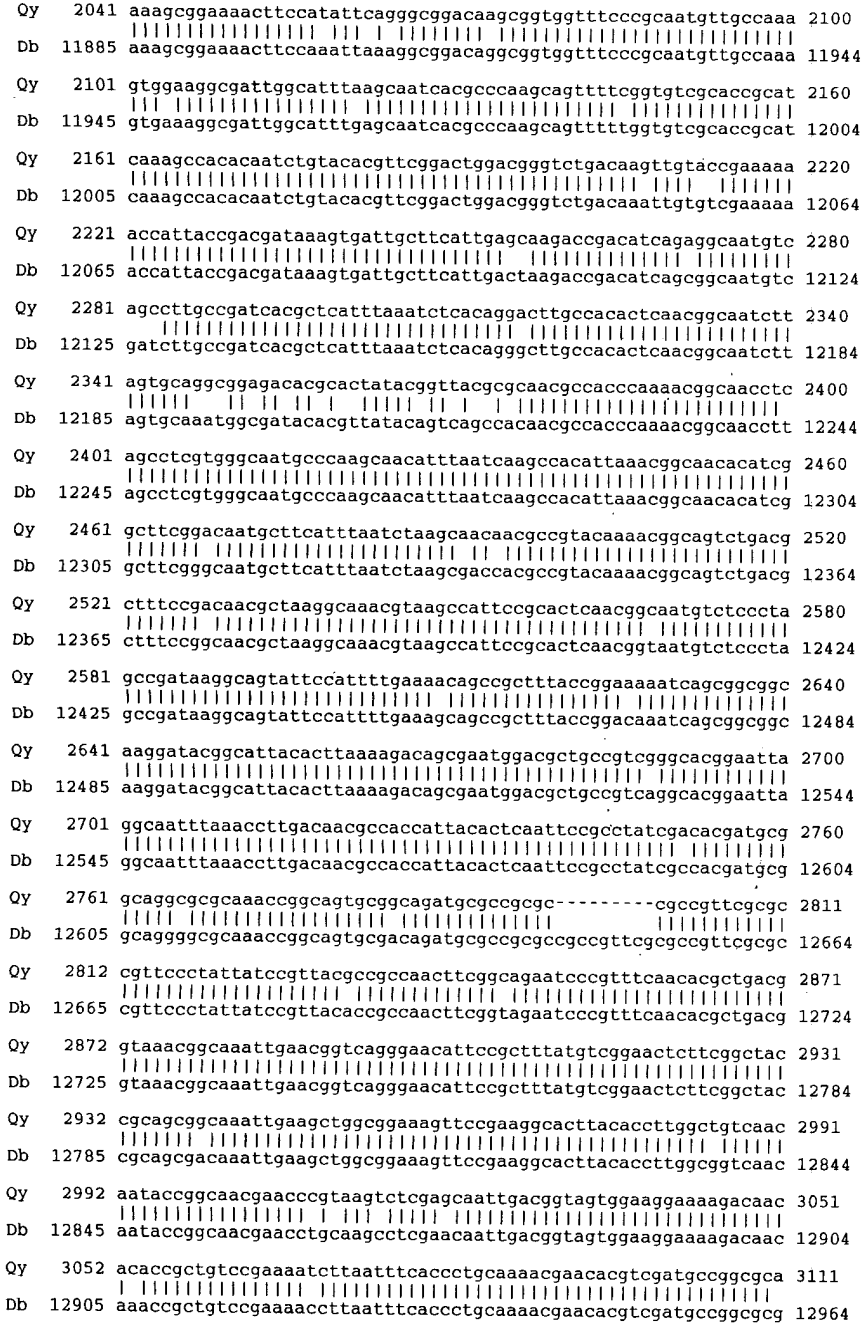
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Db  11585 aacaacagcttggatagcaaaaaagaaattgcctacaacggttggtttggcgagaaagat 11644

Qy   1801 gcaaccaaaacgaacgggcggctcaatctgaattaccaaccggaagaagcggatcgcact 1860
          | |||||||||||||||||||||||| ||   |||||| || |  | ||  || |||||
Db  11645 acgaccaaaacgaacgggcggctcaaccttgtttaccagcccgccgcagaagaccgcacc 11704

Qy   1861 ttactgctttccggcggaacaaatttaaacggcaatatcacgcaaacaaacggcaaactg 1920
          | ||||||||||||||||||||||||||||||||||||| ||||||||||||||||||||||
Db  11705 ctgctgctttccggcggaacaaatttaaacggcaacatcacgcaaacaaacggcaaactg 11764

Qy   1921 tttttcagcggcagaccgacaccgcacgcctacaatcatttaggaagcgggtggtcaaaa 1980
          |||||||||||||||| |||||||||||||||||||||||||||     |  ||||| ||
Db  11765 tttttcagcggcagaccaacaccgcacgcctacaatcatttaaacgaccattggtcgcaa 11824

Qy   1981 atggaaggtatcccacaaggagaaatcgtgtgggacaacgattggatcgaccgcacattt 2040
          |  || || || || |  || |||||||||||||||||||| |||||| ||||||||||
Db  11825 aaagagggcattcctcgcggggaaatcgtgtgggacaacgactggatcaaccgcacattt 11884
```


Qy 2041 aaagcggaaaacttccatattcagggcggacaagcggtggtttcccgcaatgttgccaaa 2100
Db 11885 aaagcggaaaacttccaaattaaaggcggacaggcggtggtttcccgcaatgttgccaaa 11944
Qy 2101 gtggaaggcgattggcatttaagcaatcacgcccaagcagttttcggtgtcgcaccgcat 2160
Db 11945 gtgaaaggcgattggcatttgagcaatcacgcccaagcagttttggtgtcgcaccgcat 12004
Qy 2161 caaagccacacaatctgtacacgttcggactggacgggtctgacaagttgtaccgaaaaa 2220
Db 12005 caaagccacacaatctgtacacgttcggactggacgggtctgacaaattgtgtcgaaaaa 12064
Qy 2221 accattaccgacgataaagtgattgcttcattgagcaagaccgacatcagaggcaatgtc 2280
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Qy 2281 agccttgccgatcacgctcatttaaatctcacaggacttgccacactcaacggcaatctt 2340
Db 12125 gatcttgccgatcacgctcatttaaatctcacagggcttgccacactcaacggcaatctt 12184
Qy 2341 agtgcaggcggagacacgcactatacggttacgcgcaacgccacccaaaacggcaacctc 2400
Db 12185 agtgcaaatggcgatacacgttatacagtcagccacaacgccacccaaaacggcaacctt 12244
Qy 2401 agcctcgtgggcaatgcccaagcaacatttaatcaagccacattaaacggcaacacatcg 2460
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Qy 2461 gcttcggacaatgcttcatttaatctaagcaacaacgccgtacaaaacggcagtctgacg 2520
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Qy 2521 ctttccgacaacgctaaggcaaacgtaagccattccgcactcaacggcaatgtctccccta 2580
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Qy 2992 aataccggcaacgaacccgtaagtctcgagcaattgacggtagtggaaggaaaagacaac 3051
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Qy 3052 acaccgctgtccgaaaatcttaatttcaccctgcaaaacgaacacgtcgatgccggcgca 3111
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Qy 3232 caggcacaacttgccgccaaacaacaggcggaaaaagacaacgcgcaaagccttgacgcg 3291
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Qy 3352 caggcaggcggggaaaatgccggcattatgcaggcggaggaagagaaaaaacgggtgcag 3411
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Qy 3892 ttcgacatcggcatcagcgcgggcgcgggttttagtagcggcagcctttcagacggcatc 3951
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Qy 4072 gattaccgatacgaaaacgtcaatatcgccaccccgggccttgcattcaaccgctaccgc 4131
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Qy 4132 gcgggcattaaggcagattattcattcaaaccggcgcaacacatttccatcacgccttat 4191
Db 13943 gcgggcattaaggcagattattcattcaaaccggcgcaacacatttccatcacgccttat 14002
Qy 4192 ttgagcctgtcctataccgatgccgcttccggcaaagtccgaacgcgcgtcaataccgcc 4251

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          |||||||||||||||||||||||||||| |||||||||||||| ||||||||||||||||
Db  14003 ttgagcctgtcctataccgatgccgcttcgggcaaagtccgaacacgcgtcaataccgcc 14062

Qy   4252 gtattggcgcaggatttcggcaaaacccgcagtgcggaatggggcgtaaacgccgaaatc 4311
          |||||||| ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  14063 gtattggctcaggatttcggcaaaacccgcagtgcggaatggggcgtaaacgccgaaatc 14122

Qy   4312 aaaggtttcacgctgtccctccacgctgccgccgccaaggggccgcaattggaagcgcag 4371
          |||||||||||||||||||||||||||||||||||| || |||||| ||||||||||
Db  14123 aaaggtttcacgctgtccctccacgctgccgccgccaaaggcccgcaactggaagcgcaa 14182

Qy   4372 cacagcgcgggcatcaaattaggctaccgctggtaa 4407
          |||||||||||||||||||||||||||||||||||
Db  14183 cacagcgcgggcatcaaattaggctaccgctggtaa 14218


RESULT   7
AAF21612/c
ID   AAF21612 standard; DNA; 349980 BP.
XX
AC   AAF21612;
XX
DT   13-MAR-2001  (first entry)
XX
DE   Neisseria meningitidis B nucleotide sequence SEQ ID NO:113.
XX
KW   Neisseria meningitidis; Neisseria gonorrheae; immunogenic; vaccine;
KW   diagnosis; antigen; detection; infection; gene therapy; antibacterial;
KW   ds.
XX
OS   Neisseria meningitidis.
XX
PN   WO200066791-A1.
XX
PD   09-NOV-2000.
XX
PF   08-MAR-2000; 2000WO-US05928.
XX
PR   30-APR-1999;   99US-0132068.
PR   08-OCT-1999;   99WO-US23573.
PR   28-FEB-2000; 2000GB-0004695.
XX
PA   (CHIR ) CHIRON CORP.
PA   (GENO-) INST GENOMIC RES.
XX
PI   Pizza M,  Hickey E,  Peterson J,  Tettelin H,  Venter JC,  Masignani V;
PI   Galeotti C,  Mora M,  Ratti G,  Scarselli M,  Scarlato V,  Rappuoli R;
PI   Frazer CM,  Grandi G;
XX
DR   WPI; 2000-647603/62.
XX
PT   Neisseria meningitidis B full length genome sequence and open reading
PT   frames are used to detect, treat and prevent Neisserial infections -
XX
PS   Claim 7; Appendix A; 692pp; English.
XX
CC   The present invention describes the full length genome of
CC   Neisseria meningitidis B (NMB). The sequences in AAF21544 and AAF21607
CC   to AAF21613 represent fragments of the NMB genomic sequence, as the
CC   sequence was too long to go in a record on its own it was split into 8
CC   sequences which overlap each other at the beginning and end of each
CC   sequence by 49980 bp (i.e. the last 49980 bp of AAF21544 is repeated at
CC   the beginning  of AAF21607, the last 49980 bp of AAF21607 are repeated at
CC   the beginning of AAF21608, and so on). AAF21545 to AAF21588 encode the
CC   Neisseria proteins given in AAB58550 to AAB58593, and AAF21589 to
CC   AAF21606 represent PCR primers which are used in the exemplification of
CC   the present invention. The NMB genome and fragments from it have
CC   antibacterial activity, and can be used in vaccines and gene therapy.
CC   Neisseria nucleic acids, proteins and/or antibodies which binds to the
CC   proteins can be used in compositions for treating or preventing infection
CC   due to Neisserial bacteria or as a diagnostic reagent for detecting the
CC   presence of Neisserial bacteria or of antibodies raised to Neisserial
CC   bacteria. Computers, computer memory, computer storage medium or computer
CC   databases can be used in a search to identify open reading frames (ORFs)
CC   or coding sequences within the NMB genome. The DNA sequences provide
CC   further opportunities to find antigenic or immunogenic proteins which are
CC   more effective in vaccines than the outer membrane proteins currently
CC   used.
XX
SQ   Sequence 349980 BP; 86473 A; 95646 C; 85908 G; 81953 T; 0 other;


  Query Match             89.7%;  Score 3954.8;  DB 21;  Length 349980;
  Best Local Similarity   94.0%;  Pred. No. 0;
  Matches 4153;  Conservative    0;  Mismatches  212;  Indels   51;  Gaps    2;

Qy       1 atgaaaacaaccgacaaacggacaaccgaaacacaccgcaaagcccctaaaaccggccgc 60
           |||||||||||||||||||||||||||||||||||||||||||||||||| ||||||||||||
Db  289191 ATGAAAACAACCGACAAACGGACAACCGAAACACACCGCAAAGCCCCGAAAACCGGCCGC 289132

Qy      61 atccgcttctcgcccgcttacttagccatatgcctgtcgttcggcattctgccccaagcc 120
           |||||||||||||| ||||||||||||||||||||||||||||||||||| |||||||||
Db  289131 ATCCGCTTCTCGCCTGCTTACTTAGCCATATGCCTGTCGTTCGGCATTCTTCCCCAAGCC 289072

Qy     121 cgggcgggacacacttatttcggcatcaactaccaatactatcgcgactttgccgaaaat 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  289071 TGGGCGGGACACACTTATTTCGGCATCAACTACCAATACTATCGCGACTTTGCCGAAAAT 289012

Qy     181 aaaggcaagtttgcagtcggggcgaaagatattgaggtttacaacaaaaaaggggagttg 240
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  289011 AAAGGCAAGTTTGCAGTCGGGGCGAAAGATATTGAGGTTTACAACAAAAAAGGGGAGTTG 288952

Qy     241 gtcggcaaatcgatgacgaaagccccgatgattgatttttctgtggtatcgcgtaacggc 300
           |||||||||| ||||| ||||||||||||||||||||||||||||| ||||||||||||
Db  288951 GTCGGCAAATCAATGACAAAAGCCCCGATGATTGATTTTTCTGTGGTGTCGCGTAACGGC 288892

Qy     301 gtggcggcattggcgggcgatcaatatattgtgagcgtggcacataacggcggctataac 360
           |||||||||||| ||||||||||||||||||||||||||||||||||||||||||||||
Db  288891 GTGGCGGCATTGGTGGGCGATCAATATATTGTGAGCGTGGCACATAACGGCGGCTATAAC 288832

Qy     361 aatgttgattttggtgcggagggaagcaatcccgatcagcaccgcttttcttaccaaatt 420
           || |||||||||||||||| ||||| |||||||||| || || ||| |||| |||||
Db  288831 AACGTTGATTTTGGTGCGGAAGGAAGAAATCCCGATCAACATCGTTTTACTTATAAAATT 288772

Qy     421 gtgaaaagaaataattataaagcagggactaacggccatccttatggcggcgattatcat 480
           |||||| | ||||||||||||||||||||||| ||||||||||||||||||||||||||||
Db  288771 GTGAAACGGAATAATTATAAAGCAGGGACTAAAGGCCATCCTTATGGCGGCGATTATCAT 288712

Qy     481 atgccgcgtttgcacaaatttgtcacagatgcagaacctgttgagatgaccagttatatg 540
           |||||||||||||| ||||||||||||||||||||||||||||| ||||||||||||||||
Db  288711 ATGCCGCGTTTGCATAAATTTGTCACAGATGCAGAACCTGTTGAAATGACCAGTTATATG 288652

Qy     541 gatgggtggaaatacgctgatttaaataaataccctgatcgtgttcgaatcggagcaggc 600
           |||||| |||||||    ||| |||||| |||||||| |||||||| || || ||||||
Db  288651 GATGGGCGGAAATATATCGATCAAAATAATTACCCTGACCGTGTTCGTATTGGGGCAGGC 288592

Qy     601 agacaatattggcggtctgatgaagacgaacccaataaccgcgaaagttcatatcatatt 660
           || |||||||||| |||||||||| || ||||||||||||||||||||||||||||||||
Db  288591 AGGCAATATTGGCGATCTGATGAAGATGAGCCCAATAACCGCGAAAGTTCATATCATATT 288532

Qy     661 gcaagcgcatattcttggctcgtcggtggcaataccttgcacaaaatggatcaggtggt 720
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Db  288531 GCAAGTGCGTATTCTTGGCTCGTTGGTGGCAATACCTTTGCACAAAATGGATCAGGTGGT 288472

Qy     721 ggcacagtcaacttaggtagcgaaaaaattaaacatagcccatatggtttttttaccaaca 780
           |||||||||||||||||| ||||||||||||||||||||||||||||||||||||||||
Db  288471 GGCACAGTCAACTTAGGTAGTGAAAAAATTAAACATAGCCCATATGGTTTTTTTACCAACA 288412

Qy     781 ggaggctcatttggcgacagtggctcaccaatgtttatctatgatgcccaaaagcaaaag 840
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  288411 GGAGGCTCATTTGGCGACAGTGGCTCACCAATGTTTATCTATGATGCCCAAAAGCAAAAG 288352

Qy     841 tggttaattaatggggtattgcaaacaggcaacccctatataggaaaaagcaatggcttc 900
           |||||||||||||||||||||||| ||||||||||||||||||||||||||||||||||
Db  288351 TGGTTAATTAATGGGGTATTGCAAACGGGCAACCCCTATATAGGAAAAAGCAATGGCTTC 288292
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Qy    901 cagctagttcgtaaagattggttctatgatgaaatctttgctggagatacccattcagta 960
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Db 288291 CAGCTGGTTCGTAAAGATTGGTTCTATGATGAAATCTTTGCTGGAGATACCCATTCAGTA 288232

Qy    961 ttctacgaaccacatcaaaatgggaaatacttttttaacgacaataataatggcgcagga 1020
          |||||||||||||| |||||||||||||||| |||||||||| |||||||||| |||||
Db 288231 TTCTACGAACCACGTCAAAATGGGAAATACTCTTTTAACGACGATAATAATGGCACAGGA 288172

Qy   1021 aaaatcgatgccaaacataaacactattctctaccttatagattaaaaacacgaaccgtt 1080
          |||||| |||||||||| ||||| ||||||| ||| ||||||||||||||||||||||
Db 288171 AAAATCAATGCCAAACATGAACACAATTCTCTGCCTAATAGATTAAAAACACGAACCGTT 288112

Qy   1081 caattgtttaatgtttctttatccgagacagcaagagaacctgtttatcatgctgcaggt 1140
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 288111 CAATTGTTTAATGTTTCTTTATCCGAGACAGCAAGAGAACCTGTTTATCATGCTGCAGGT 288052

Qy   1141 ggggtcaacagttatcgacccagactgaataatggagaaaatatttcctttattgacaaa 1200
          || ||||||||||||||||||||||||||||||||||||||||||||||||||||||| ||
Db 288051 GGTGTCAACAGTTATCGACCCAGACTGAATAATGGAGAAAATATTTCCTTTATTGACGAA 287992

Qy   1201 ggaaaaggtgaattgatacttaccagcaacatcaaccaaggcgcgggcggtttgtatttt 1260
          |||||||| |||||||||||||||||||||||||||| ||||| || || || || ||||||
Db 287991 GGAAAAGGCGAATTGATACTTACCAGCAACATCAATCAAGGTGCTGGAGGATTATATTTC 287932

Qy   1261 gagggtaattttacggtctcgcctaaaaacaacgaaacgtggcaaggcgcgggcgttcat 1320
          | ||  |||||||||||||||||| |||| |||||||| ||||||||||||||||||||
Db 287931 CAAGGAGATTTTACGGTCTCGCCTGAAAATAACGAAACTTGGCAAGGCGCGGGCGTTCAT 287872

Qy   1321 atcagtgatggcagtaccgttacttggaaagtaaacggcgtggcaaacgaccgcctgtcc 1380
          |||||||| |||||||||||||||||||||||||||||||||||||||||||||||||||
Db 287871 ATCAGTGAAGACAGTACCGTTACTTGGAAAGTAAACGGCGTGGCAAACGACCGCCTGTCC 287812

Qy   1381 aaaatcggcaaaggcacgctgctggttcaagccaaaggggaaaaccaaggctcggtcagc 1440
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Db 287811 AAAATCGGCAAAGGCACGCTGCACGTTCAAGCCAAAGGGGAAAACCAAGGCTCGATCAGC 287752

Qy   1441 gtgggcgacggtaaagtcatcttagatcagcaggcggacgatcaaggcaaaaaacaagcc 1500
          |||||||||||||| |||||| || |||||||||||| |||||| ||||||||||||||||
Db 287751 GTGGGCGACGGTACAGTCATTTTGGATCAGCAGGCAGACGATAAAGGCAAAAAACAAGCC 287692

Qy   1501 tttagtgaaatcggcttggtcagcggcaggggacggtgcaactgaatgccgataatcag 1560
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 287691 TTTAGTGAAATCGGCTTGGTCAGCGGCAGGGGTACGGTGCAACTGAATGCCGATAATCAG 287632

Qy   1561 ttcaaccccgacaaactctatttcggctttcgcggcggacgtttggatttgaacgggcat 1620
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Db 287631 TTCAACCCCGACAAACTCTATTTCGGCTTTCGCGGCGGACGTTTGGATTTAAACGGGCAT 287572

Qy   1621 tcgctttcgttccaccgcattcaaaataccgatgaaggggcgatgattgtcaaccacaat 1680
          |||||||||||||||| ||||||||||||||||||||||||||||||||||||||||||||
Db 287571 TCGCTTTCGTTCCACCGTATTCAAAATACCGATGAAGGGGCGATGATTGTCAACCACAAT 287512

Qy   1681 caagacaaagaatccaccgttaccattacaggcaataaagatattactacaaccggcaat 1740
          |||||||||||||||||||||||||||||||||||||||||||||||| ||||||||||||
Db 287511 CAAGACAAAGAATCCACCGTTACCATTACAGGCAATAAAGATATTGCTACAACCGGCAAT 287452

Qy   1741 aacaacaacttggatagcaaaaaagaaattgcctacaacggttggtttggcgagaaagat 1800
          ||||||| |||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 287451 AACAACAGCTTGGATAGCAAAAAAGAAATTGCCTACAACGGTTGGTTTGGCGAGAAAGAT 287392

Qy   1801 gcaaccaaaaacgaacgggcggctcaatctgaattaccaaccggaagaagcggatcgcact 1860
          | ||||||||||||||||||||||| ||   |||||| || |  | ||  || |||||
Db 287391 ACGACCAAAACGAACGGGCGGCTCAACCTTGTTTACCAGCCCGCCGCAGAAGACCGCACC 287332

Qy   1861 ttactgctttccggcggaacaaatttaaacggcaatatcacgcaaacaaacggcaaactg 1920
          | ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 287331 CTGCTGCTTTCCGGCGGAACAAATTTAAACGGCAACATCACGCAAACAAACGGCAAACTG 287272

Qy   1921 tttttcagcggcagaccgacaccgcacgcctacaatcatttaggaagcgggtggtcaaaa 1980
          |||||||||||||||| |||||||||||||||||||||||||   |||||  ||
Db 287271 TTTTTCAGCGGCAGACCAACACCGCACGCCTACAATCATTTAAACGACCATTGGTCGCAA 287212

Qy   1981 atggaaggtatcccacaaggagaaatcgtgtgggacaacgattggatcgaccgcacattt 2040
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Qy   2041 aaagcggaaaacttccatattcagggcggacaagcggtggtttcccgcaatgttgccaaa 2100
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Db 287091 GTGAAAGGCGATTGGCATTTGAGCAATCACGCCCAAGCAGTTTTTGGTGTCGCACCGCAT 287032

Qy   2161 caaagccacacaatctgtacacgttcggactggacgggtctgacaagttgtaccgaaaaa 2220
          |||||||||||||||||||||||||||||||||||||||||||||||| ||||  ||||||||
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Qy   2221 accattaccgacgataaagtgattgcttcattgagcaagaccgacatcagaggcaatgtc 2280
          |||||||||||||||||||||||||||||||||||||  ||||||||||||||| |||||||||
Db 286971 ACCATTACCGACGATAAAGTGATTGCTTCATTGACTAAGACCGACATCAGCGGCAATGTC 286912

Qy   2281 agccttgccgatcacgctcatttaaatctcacaggacttgccacactcaacggcaatctt 2340
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Qy   2872 gtaaacggcaaattgaacggtcagggaacattccgctttatgtcggaactcttcggctac 2931
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Db 286131 AAACCGCTGTCCGAAAACCTTAATTTCACCCTGCAAAACGAACACGTCGATGCCGGCGCG 286072

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Db 286071 TGGCGTTACCAACTCATCCGCAAAGACGGCGAGTTCCGCCTGCATAATCCGGTCAAAGAA 286012

Qy   3172 caagagctttccgacaaactcggcaaggcgggagaaacagaggccgccttgacggcaaaa 3231
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Db 284913 AAAGGTTTCACGCTGTCCCTCCACGCTGCCGCCGCCAAAGGCCCGCAACTGGAAGCGCAA 284854

Qy   4372 cacagcgcgggcatcaaattaggctaccgctggtaa 4407
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Db 284853 CACAGCGCGGGCATCAAATTAGGCTACCGCTGGTAA 284818


RESULT   8
AAA81489/c
ID   AAA81489 standard; DNA; 837096 BP.
XX
AC   AAA81489;
XX
DT   04-DEC-2000  (first entry)
XX
DE   N. meningitidis partial DNA sequence gnm_37 SEQ ID NO:37.
XX
KW   Neisseria meningitidis; Neisseria gonorrheae; genome; immunogenic;
KW   antigen; vaccine; diagnosis; infection; antibacterial; identification;
KW   Meningococcus B; MenB; ds.
XX
OS   Neisseria meningitidis.
XX
PN   WO200022430-A2.
XX
PD   20-APR-2000.
XX
PF   08-OCT-1999;   99WO-US23573.
XX
PR   09-OCT-1998;   98US-0103794.
PR   30-APR-1999;   99US-0132068.
XX
PA   (CHIR ) CHIRON CORP.
XX
PI   Frazer CM,  Hickey E,  Peterson J,  Tettelin H,  Venter JC;
PI   Masignani V,  Galeotti C,  Mora M,  Ratti G,  Scarselli M,  Scarlato V;
PI   Rappuoli R,  Pizza M;
XX
DR   WPI; 2000-318079/27.
XX
PT   Isolated nucleotide sequences of Neisseria meningitidis which can be
PT   used in the diagnosis and treatment of N. meningitidis infection and
PT   other Neisserial infections, for example, N.gonorrhoea -
XX
PS   Claim 7; Page 629-865; 1760pp; English.
XX
CC   The present invention describes methods of obtaining immunogenic
CC   proteins from Neisseria genomic sequences. AAA81453 to AAA82414
CC   represent specifically claimed Neisseria meningitidis genomic DNA
CC   sequences; AAA81260 to AAA81303 and AAB25620 to AAB25663 represent
CC   Neisseria DNA sequences and their corresponding proteins; AAA81254 to
CC   AAA81259 and AAA81304 to AAA81321 represent PCR primers used in the
CC   isolation of Neisseria meningitidis DNA sequences; and AAA81322 to
CC   AAA81452 represent Neisseria meningitidis MenB polynucleotide ORF
CC   sequences, which are all used in the exemplification of the present
CC   invention. The nucleic acid sequences, protein sequences, and antibodies
CC   against them, can be used in the manufacture of a composition. The
CC   composition can be used as a medicament (or in the manufacture of a
CC   medicament) for treating, preventing or diagnosing infection due to
CC   Neisserial bacteria. For example, some of the identified proteins could
CC   be components of vaccines against Meningococcus B; against all serotypes;
CC   and/or against all pathogenic Neissariae. Identification of sequences
```

CC from the bacterium will also facilitate production of biological probes,
CC particularly organism-specific probes. Attempts to make efficacious
CC Meningococcus B vaccines have failed mainly due to antigen tolerance.
CC Multivalent vaccines have also been tried but none have successfully
CC overcome antigenic variability. The provision of further, complete
CC sequences may provide an opportunity to identify secreted or surface
CC exposed proteins that may be presumed targets for the immune system and
CC which are not antigenically variable or at least more conserved than
CC other more variable regions.
XX
SQ Sequence 837096 BP; 207534 A; 227065 C; 205215 G; 197280 T; 2 other;

Query Match 89.7%; Score 3954.8; DB 21; Length 837096;
Best Local Similarity 94.0%; Pred. No. 0;
Matches 4153; Conservative 0; Mismatches 212; Indels 51; Gaps 2;

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Qy      1 atgaaaacaaccgacaaacggacaaccgaaacacaccgcaaagcccctaaaaccggccgc 60
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Db 653962 ATGAAAACAACCGACAAACGGACAACCGAAACACACCGCAAAGCCCCGAAAACCGGCCGC 653903

Qy     61 atccgcttctcgcccgcttacttagccatatgcctgtcgttcggcattctgccccaagcc 120
          ||||||||||||||| ||||||||||||||||||||||||||||||||||| |||||||||
Db 653902 ATCCGCTTCTCGCCTGCTTACTTAGCCATATGCCTGTCGTTCGGCATTCTTCCCCAAGCC 653843

Qy    121 cgggcgggacacacttatttcggcatcaactaccaatactatcgcgactttgccgaaaat 180
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Db 653602 AACGTTGATTTTGGTGCGGAAGGAAGAAATCCCGATCAACATCGTTTTACTTATCAAATT 653543

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Db 653422 GATGGGCGGAAATATATCGATCAAAATAATTACCCTGACCGTGTTCGTATTGGGGCAGGC 653363

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Db 653242 GGCACAGTCAACTTAGGTAGTGAAAAAATTAAACATAGCCCATATGGTTTTTTTACCAACA 653183

Qy    781 ggaggctcatttggcgacagtggctcaccaatgtttatctatgatgcccaaaagcaaaag 840
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Db 652882 CAATTGTTTAATGTTTCTTTATCCGAGACAGCAAGAGAACCTGTTTATCATGCTGCAGGT 652823

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Db 652702 CAAGGAGATTTTACGGTCTCGCCTGAAAATAACGAAACTTGGCAAGGCGCGGGCGTTCAT 652643

Qy   1321 atcagtgatggcagtaccgttacttggaaagtaaacggcgtggcaaacgaccgcctgtcc 1380
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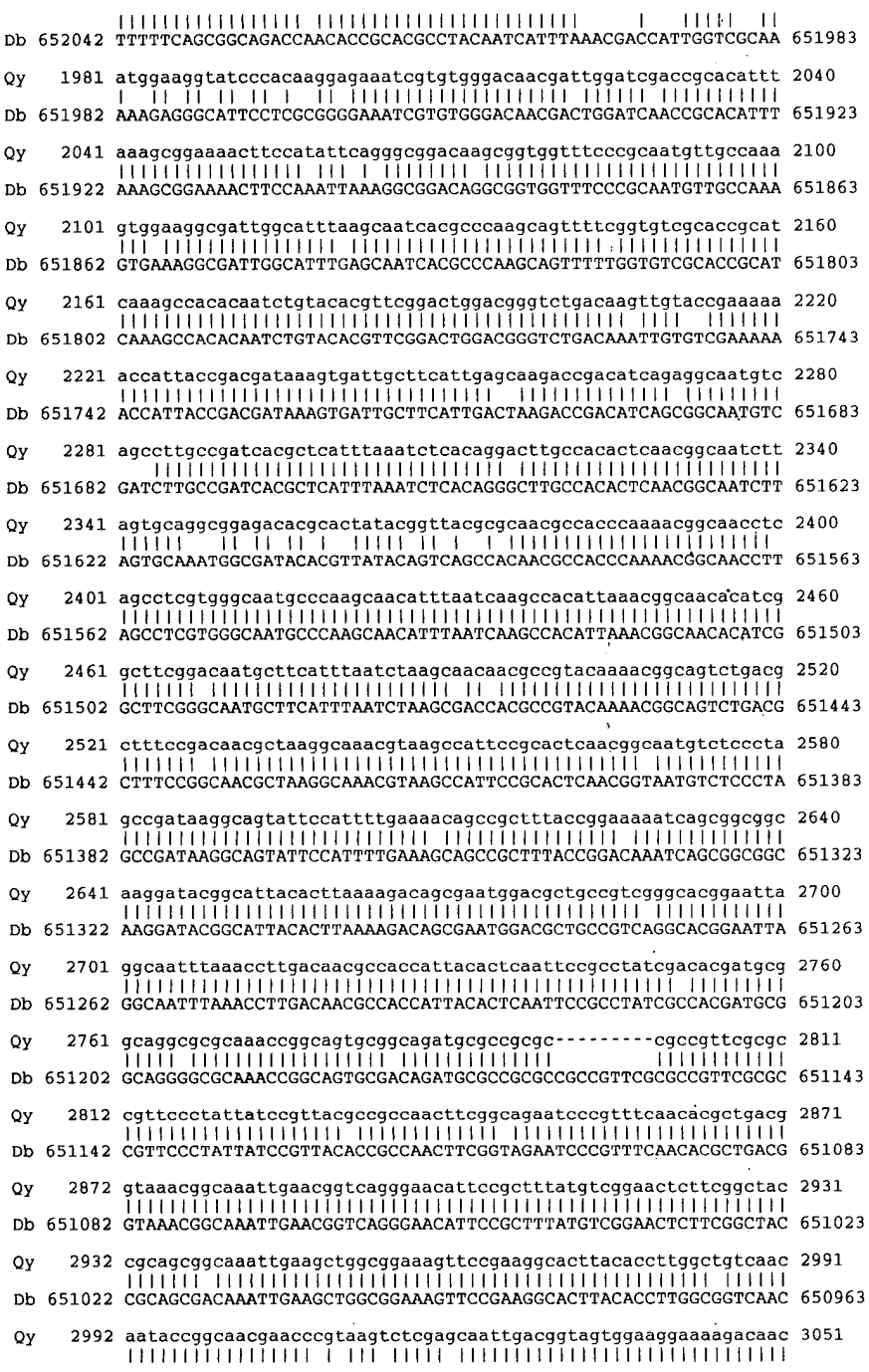
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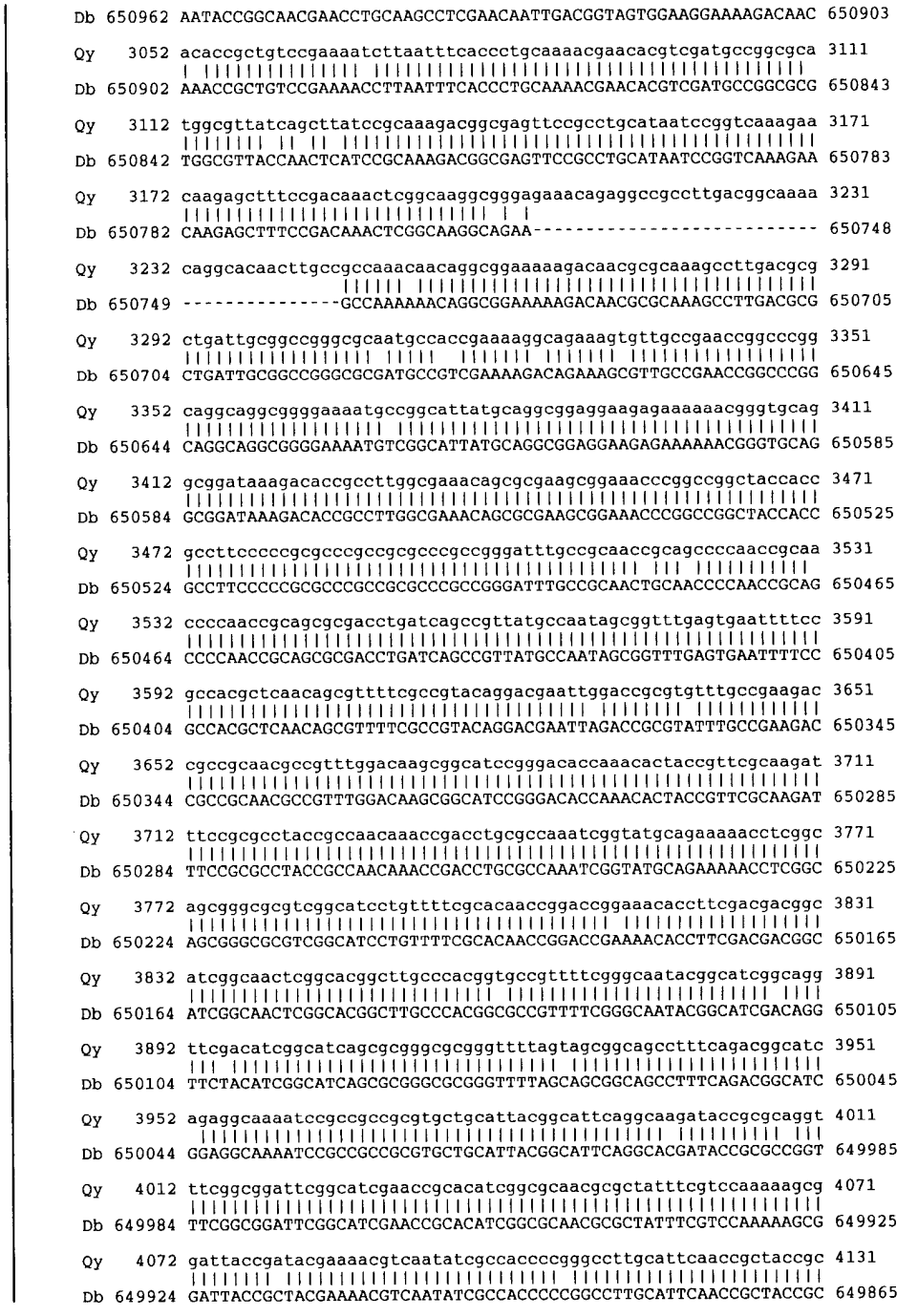
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RESULT 9
AAZ38918
ID AAZ38918 standard; DNA; 4374 BP.
XX
AC AAZ38918;
XX
DT 21-FEB-2000 (first entry)
XX
DE Neisseria meningitidis strain H44/76 BASB006 nucleotide sequence.
XX
KW Neisseria meningitidis; BASB006; diagnosis; bacterial; infection;
KW vaccine; antibiotic; upper respiratory tract infection; meningitis;
KW invasive bacterial disease; bacteraemia; screening; antibacterial; ss.
XX
OS Neisseria meningitidis.
XX
FH Key Location/Qualifiers
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XX
PA (SMIK) SMITHKLINE BEECHAM BIOLOGICALS.
XX
PI Thonnard J;
XX
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DR P-PSDB; AAY56622.
XX
PT Novel polynucleotides and polypeptides from Neisseria meningitis used
PT to prepare vaccines against bacterial infections -
XX
PS Claim 11; Page 91-93; 103pp; English.
XX
CC The present sequence encodes BASB006 isolated from Neisseria meningitidis
CC strain H44/76. BASB006 polynucleotides and polypeptides may be
CC employed as research reagents and material for the discovery of
CC treatments and diagnostics for diseases, particularly human diseases.
CC They can be used for diagnosis of disease, staging of disease, or
CC determining response of an infectious organism to drugs. The
CC polynucleotides may be used as a source for hybridisation probes, and for
CC screening of genetic mutations, serotype, organism or strain
CC identification, identification of mutation in BASB013 sequences, and as
CC components of arrays which are useful for diagnostic and prognostic
CC purposes. The polypeptides can be used to produce antibodies. The
CC polypeptides can also be used in vaccine formulations, and to identify
CC agonists and antagonists. The polypeptides, antibodies, agonists and
CC antagonists (which are bacteristatic) are used for the treatment and
CC prevention of diseases such as upper respiratory tract infection,
CC invasive bacterial diseases such as bacteraemia and meningitis, and for
CC the development and screening of antibacterial drugs. They are also used
CC in the prevention of adhesion of bacteria to eukaryotic matrix proteins
CC on in-dwelling devices, or to extracellular proteins on wounds, and to
CC prevent tissue damage and/or block the normal progression of pathogenesis
CC in infections initiated other than by the implantation of in-dwelling
CC devices or by other surgical techniques.
XX
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Query Match 89.5%; Score 3945.2; DB 21; Length 4374;
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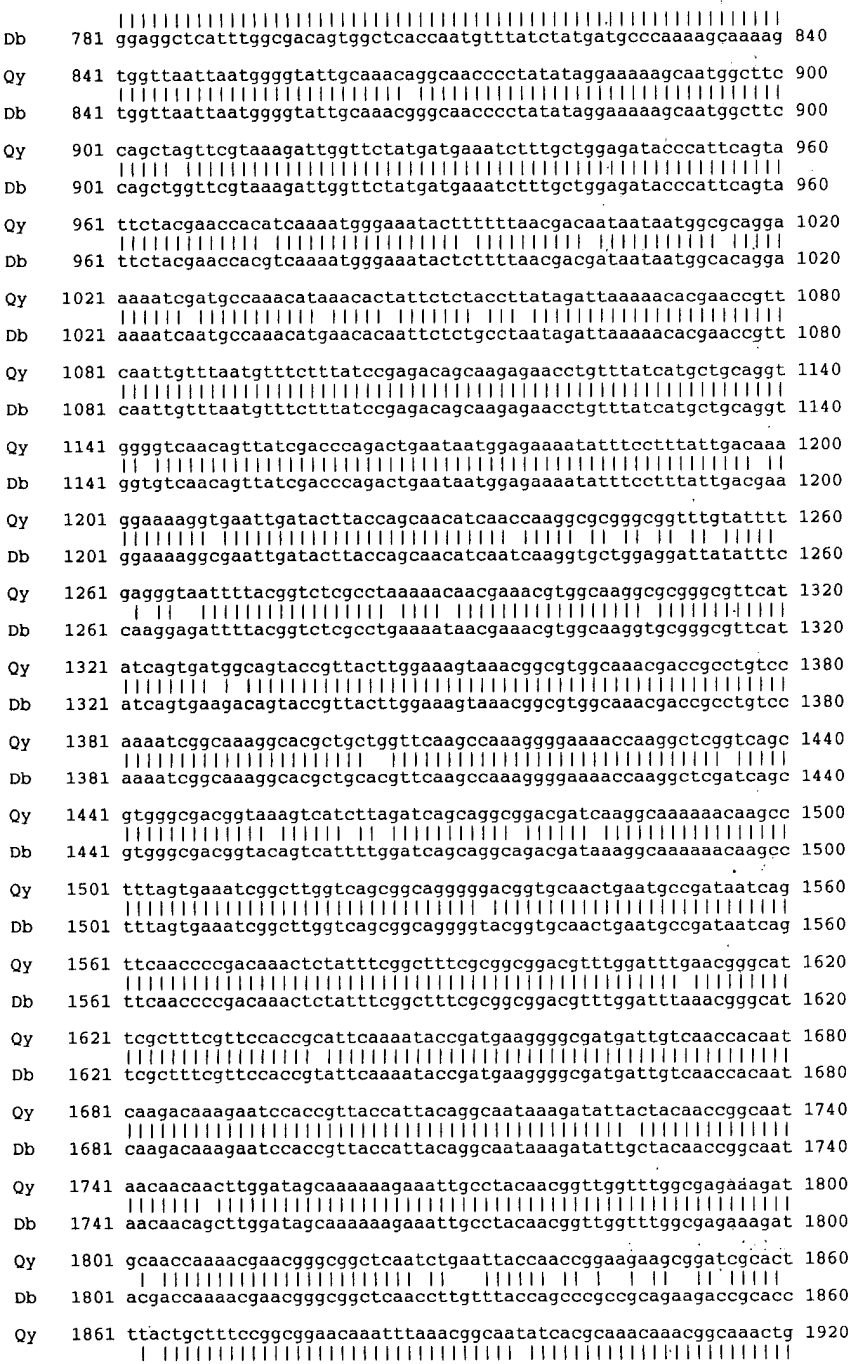
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RESULT 10
AAZ12252
ID AAZ12252 standard; DNA; 4350 BP.
XX
AC AAZ12252;
XX
DT 08-OCT-1999 (first entry)
XX
DE Neisseria meningitidis strain A complete ORF1 sequence.
XX
KW Neisseria meningitidis; Neisseria gonorrhoeae; antigen; vaccine;
KW treatment; Neisseria infection; meningitis; septicaemia; gonorrhea; ss.
XX
OS Neisseria meningitidis.
XX
PN WO9924578-A2.
XX
PD 20-MAY-1999.
XX
PF 09-OCT-1998; 98WO-IB01665.
XX
PR 01-SEP-1998; 98GB-0019016.
PR 06-NOV-1997; 97GB-0023516.
PR 14-NOV-1997; 97GB-0024190.
PR 18-NOV-1997; 97GB-0024386.
PR 27-NOV-1997; 97GB-0025158.
PR 10-DEC-1997; 97GB-0026147.
PR 14-JAN-1998; 98GB-0000759.
XX
PA (CHIR-) CHIRON SPA.
XX
PI Grandi G, Masignani V, Pizza M, Rappuoli R, Scarlato V;
XX
DR WPI; 1999-327407/27.
DR P-PSDB; AAY38824.
XX
PT Proteins from Neisseria meningitidis and N. gonorrhoeae useful for
PT diagnosis, treatment and prevention of infection
XX
PS Claim 9; Page 364-365; 524pp; English.
XX
CC Nucleotide sequences AAZ11972-Z12358 represent open reading frames
CC (ORFs) of Neisseria meningitidis and N. gonorrhoeae which encode
CC antigenic proteins (see AAY38499-Y38944). The antigenic proteins, their
CC fragments, their nucleic acids and antibodies are used for diagnosis,
CC prevention (as vaccines) or treatment of Neisseria infections,
CC such as meningitis, septicaemia and gonorrhea. Both organisms
CC are closely related. Fragments of the nucleic acids are useful

```
CC   as hybridisation probes and antisense reagents.
XX
SQ   Sequence 4350 BP; 1225 A; 1161 C; 1060 G; 842 T; 62 other;

  Query Match             76.8%;  Score 3385.8;  DB 20;  Length 4350;
  Best Local Similarity   86.3%;  Pred. No. 0;
  Matches 3814;  Conservative    0;  Mismatches  524;  Indels   81;  Gaps    7;

Qy      1 atgaaaacaaccgacaaacggacaaccgaaacacaccgcaaagcccctaaaaccggccgc 60
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Qy    121 cgggcgggacacacttatttcggcatcaactaccaatactatcgcgactttgccgaaaat 180
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Qy    181 aaaggcaagtttgcagtcggggcgaaagatattgaggtttacaacaaaaaaggggagttg 240
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Qy    241 gtcggcaaatcgatgacgaaagccccgatgattgatttttctgtggtatcgcgtaacggc 300
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Qy    781 ggaggctcatttggcgacagtggctcaccaatgtttatctatgatgcccaaaagcaaaag 840
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Qy    841 tggttaattaatggggtattgcaaacaggcaacccctatataggaaaaagcaatggcttc 900
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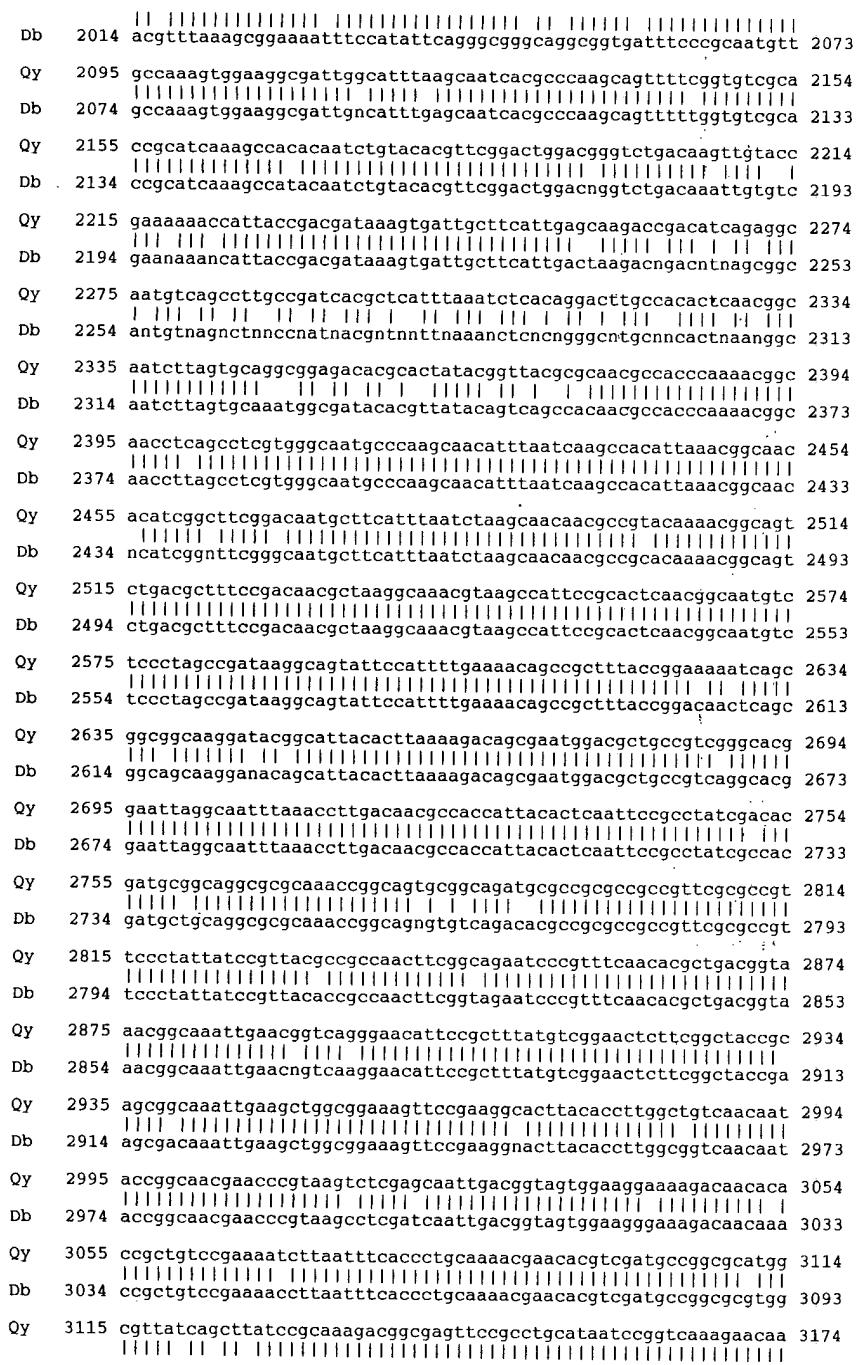
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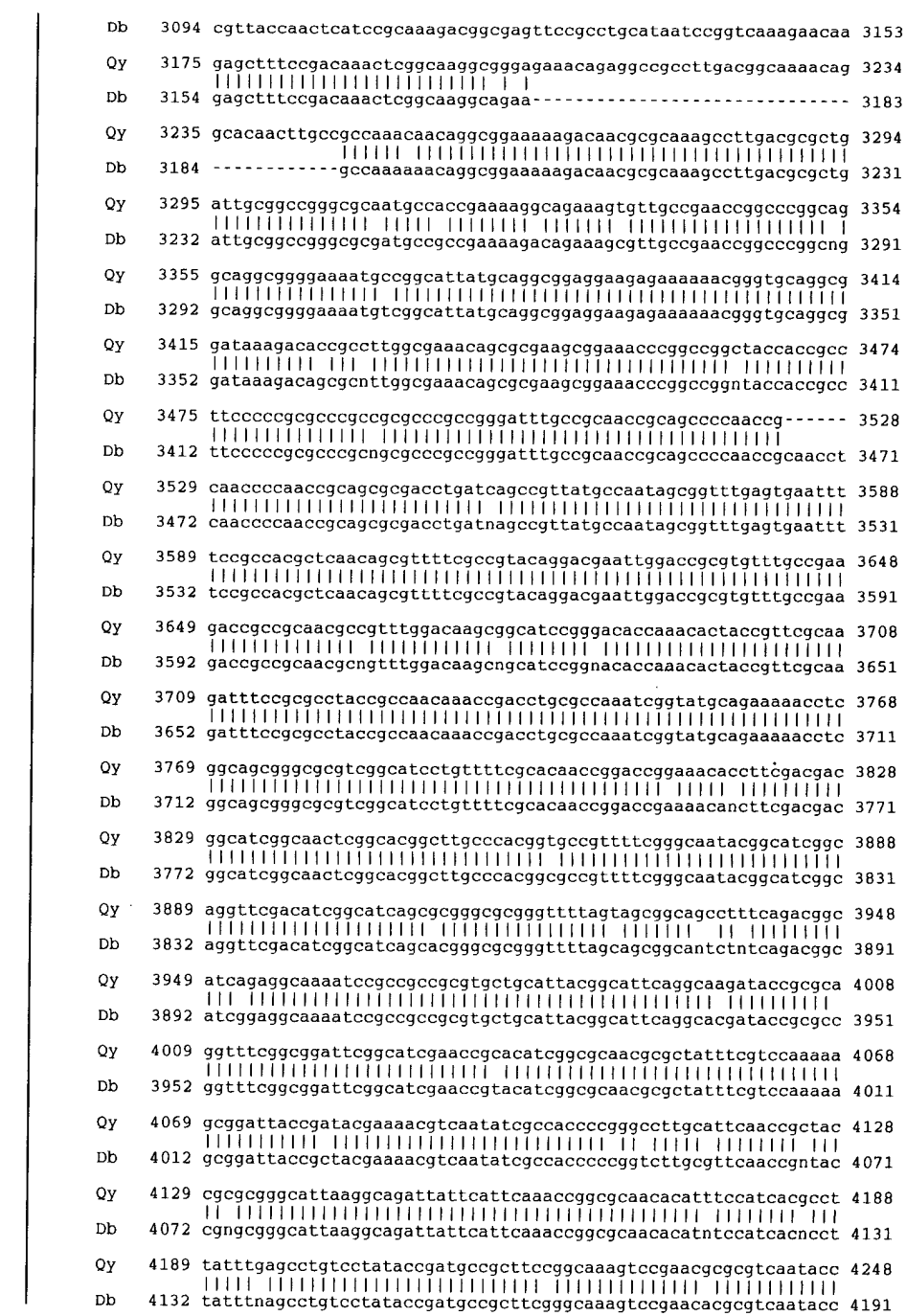
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Db   1834 cgcacccngctgctttccggcggaacaaatttaaacggcaacatcacgcaaacaaacggc 1893

Qy   1915 aaactgtttttcagcggcagaccgacaccgcacgcctacaatcatttaggaagcgggtgg 1974
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Db   1894 aaactgtttttcagcggcagaccgacaccgcacgcctacaatcatttaggaagcgggtgg 1953

Qy   1975 tcaaaaatggaaggtatcccacaaggagaaatcgtgtgggacaacgattggatcgaccgc 2034
          |||||||||||||||||||||||||||||||||||||||||||||||||| ||||| |||||
Db   1954 tcaaaaatggaaggtatcccacaaggagaaatcgtgtgggacaacgactggatcnaccgc 2013

Qy   2035 acatttaaagcggaaaacttccatattcagggcggacaagcggtggtttcccgcaatgtt 2094
```


Db 2014 acgtttaaagcggaaaatttccatattcagggcgggcaggcggtgatttcccgcaatgtt 2073
Qy 2095 gccaaagtggaaggcgattggcatttaagcaatcacgcccaagcagttttcggtgtcgca 2154
Db 2074 gccaaagtggaaggcgattgncatttgagcaatcacgcccaagcagtttttggtgtcgca 2133
Qy 2155 ccgcatcaaagccacacaatctgtacacgttcggactggacgggtctgacaagttgtacc 2214
Db 2134 ccgcatcaaagccatacaatctgtacacgttcggactggacnggtctgacaaattgtgtc 2193
Qy 2215 gaaaaaaccattaccgacgataaagtgattgcttcattgagcaagaccgacatcagaggc 2274
Db 2194 gaanaaancattaccgacgataaagtgattgcttcattgactaagacngacntnagcggc 2253
Qy 2275 aatgtcagccttgccgatcacgctcatttaaatctcacaggacttgccacactcaacggc 2334
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Qy 4189 tatttgagcctgtcctataccgatgccgcttccggcaaagtccgaacgcgcgtcaatacc 4248
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Qy   4309 atcaaaggtttcacgctgtccctccacgctgccgccgccaaggggccgcaattggaagcg 4368
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Qy   4369 cagcacagcgcgggcatcaaattaggctaccgctggtaa 4407
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RESULT  11
AAT17215
ID   AAT17215 standard; DNA; 4319 BP.
XX
AC   AAT17215;
XX
DT   01-JUN-1996  (first entry)
XX
DE   Adhesion and penetration protein gene.
XX
KW   Adhesion and penetration protein; hap gene; promoter; terminator;
KW   inverted repeat; stem-loop; protease; outer membrane protein;
KW   beta-domain; secretion; recombinant vaccine; monoclonal antibody;
KW   diagnostic; immunoassay; ds.
XX
OS   Haemophilus influenzae.
XX
FH   Key             Location/Qualifiers
FT   -35_signal      5..10
FT                   /*tag=  a
FT   -10_signal      26..31
FT                   /*tag=  b
FT   sig_peptide     60..134
FT                   /*tag=  c
FT   CDS             60..4244
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FT                   /*tag=  e
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FT                   /*tag=  f
FT                   /product= Secreted 110-kDa protease fragment
FT   mat_peptide     2937..4241
FT                   /*tag=  g
FT                   /product= 45-kDa outer membrane protein fragment
FT   terminator      4284..4302
FT                   /*tag=  h
FT   repeat_region   4284..4302
FT                   /*tag=  i
FT                   /rpt_type= INVERTED
FT   stem_loop       4284..4302
FT                   /*tag=  j
XX
PN   WO9605858-A1.
XX
PD   29-FEB-1996.
XX
PF   16-AUG-1995;   95WO-US10661.
XX
PR   25-AUG-1994;   94US-0296791.
XX
PA   (STRD ) UNIV LELAND STANFORD JUNIOR.
PA   (UNIW ) UNIV WASHINGTON.
XX
PI   Falkow S,  St Geme JW;
XX
DR   WPI; 1996-151147/15.
DR   P-PSDB; AAR92768.
XX
PT   Haemophilus adhesion and penetration protein and corresponding DNA
PT   - used to produce vaccines against H. influenzae infection
XX
PS   Claim 5; Fig 6; 105pp; English.
XX
CC   The sequence encodes a Haemophilus influenzae adhesion and
CC   penetration protein.  The sequence (hap gene) includes putative
CC   -10 and -30 sequences and a putative rho-independent terminator 3'
CC   to the hap stop codon.  The terminator contains interrupted
CC   inverted repeats, with the potential for forming a hairpin
CC   structure containing a loop of 3 bases and a stem of 8 bases,
CC   followed by a stretch rich in T residues.  The gene product is
CC   first synthesised as a preprotein, which is transported to the
CC   periplasm, followed by insertion of the C-terminal beta-domain into
CC   the outer membrane, possibly forming a pore, and export of the
CC   N-terminal fragment through the outer membrane, followed by
CC   autoproteolytic cleavage and secretion of the mature protease, leaving
CC   an outer membrane protein fragment.  The gene may be inserted in a
CC   vector and expressed in recombinant host cells, for use as a
CC   recombinant vaccine.  The gene product may also be used in
CC   diagnostic monoclonal antibody production.
XX
SQ   Sequence 4319 BP; 1497 A; 776 C; 891 G; 1155 T; 0 other;
```

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  Query Match             29.4%;  Score 1297.8;  DB 17;  Length 4319;
  Best Local Similarity   59.1%;  Pred. No. 0;
  Matches 2571;  Conservative    0;  Mismatches 1567;  Indels  213;  Gaps   12;

Qy     78 ttacttagccatatgcctgtcgttcggcattctgccccaagcccgggcgggacacactta 137
          ||  ||| ||   ||| | || || || ||  |  | |||||  |||| || ||||||||
Db     86 ttttttaaccgcttgcatttcattagggatagtatcgcaagcgtgggctggtcacactta 145

Qy    138 tttcggcatcaactaccaatactatcgcgactttgccgaaaataaaggcaagtttgcagt 197
          ||| || ||  | ||||||||| ||||| || |||||||| |||||||| |||||  ||||
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Qy    198 cggggcgaaagatattgaggtttacaacaaaaaaggggagttggtcggcaaatcgatgac 257
           |||||  || |||||| ||||||| |||||| ||||| | || || |||| ||| |||||
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Qy    258 gaaagccccgatgattgatttttctgtggtatcgcgtaacggcgtggcggcattggcggg 317
          |||||||||||||||||||||||||||| || || ||||||||||||||| || ||||  |
Db    266 aaaagccccgatgattgatttttctgtagtgtcacgtaacggcgtggcagccttggttga 325

Qy    318 cgatcaatatattgtgagcgtggcacataacggcggctataacaatgttgattttggtgc 377
          ||||||||||||||||||||||||||||||  || ||||   ||||||||||||||||
Db    326 aaatcaatatattgtgagcgtggcacataacgtaggatatacagatgttgattttggtgc 385

Qy    378 ggagggaagcaatcccgatcagcaccgcttttcttaccaaattgtgaaaagaaataatta 437
          |||||||  ||| |||||||| || || ||| ||||  | ||||| ||| ||||||| ||
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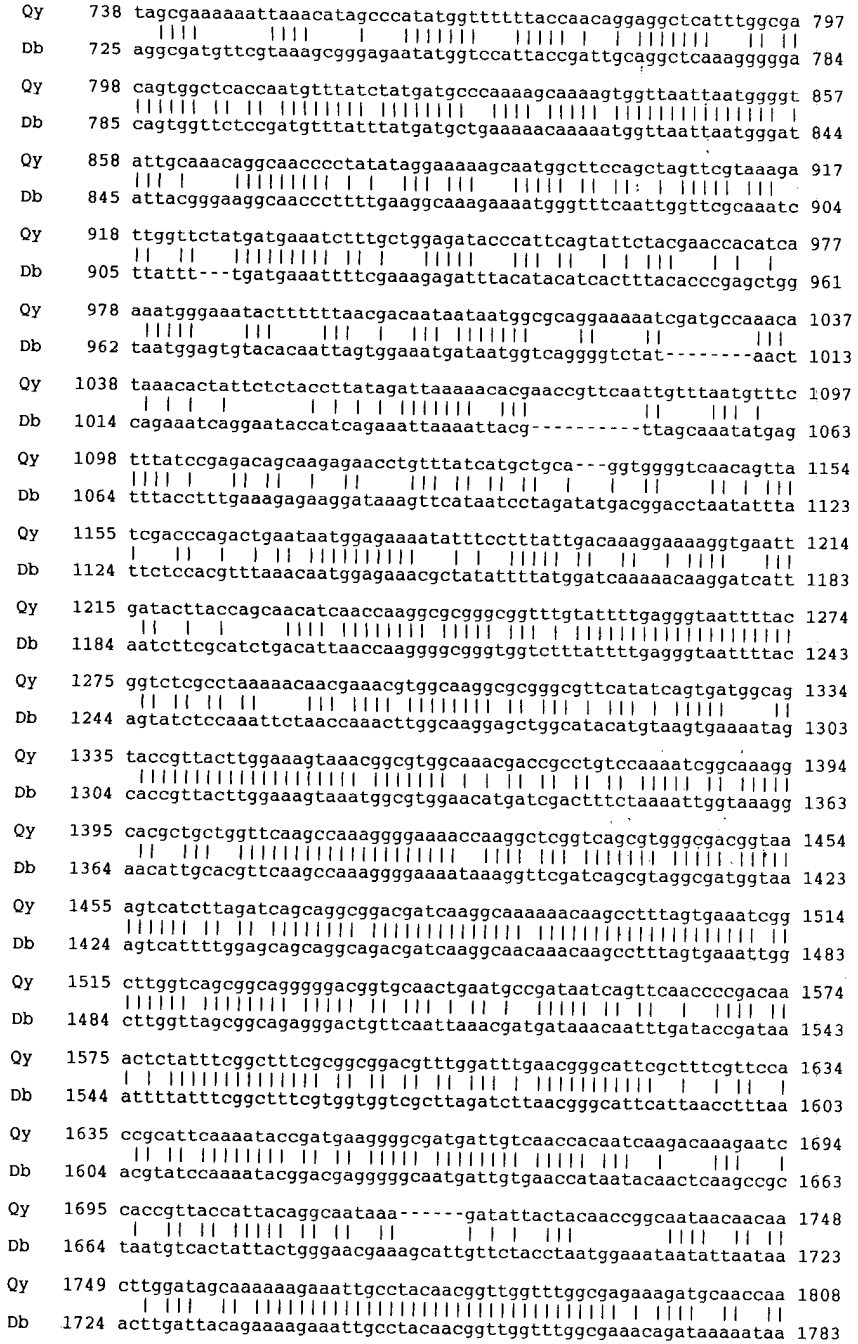
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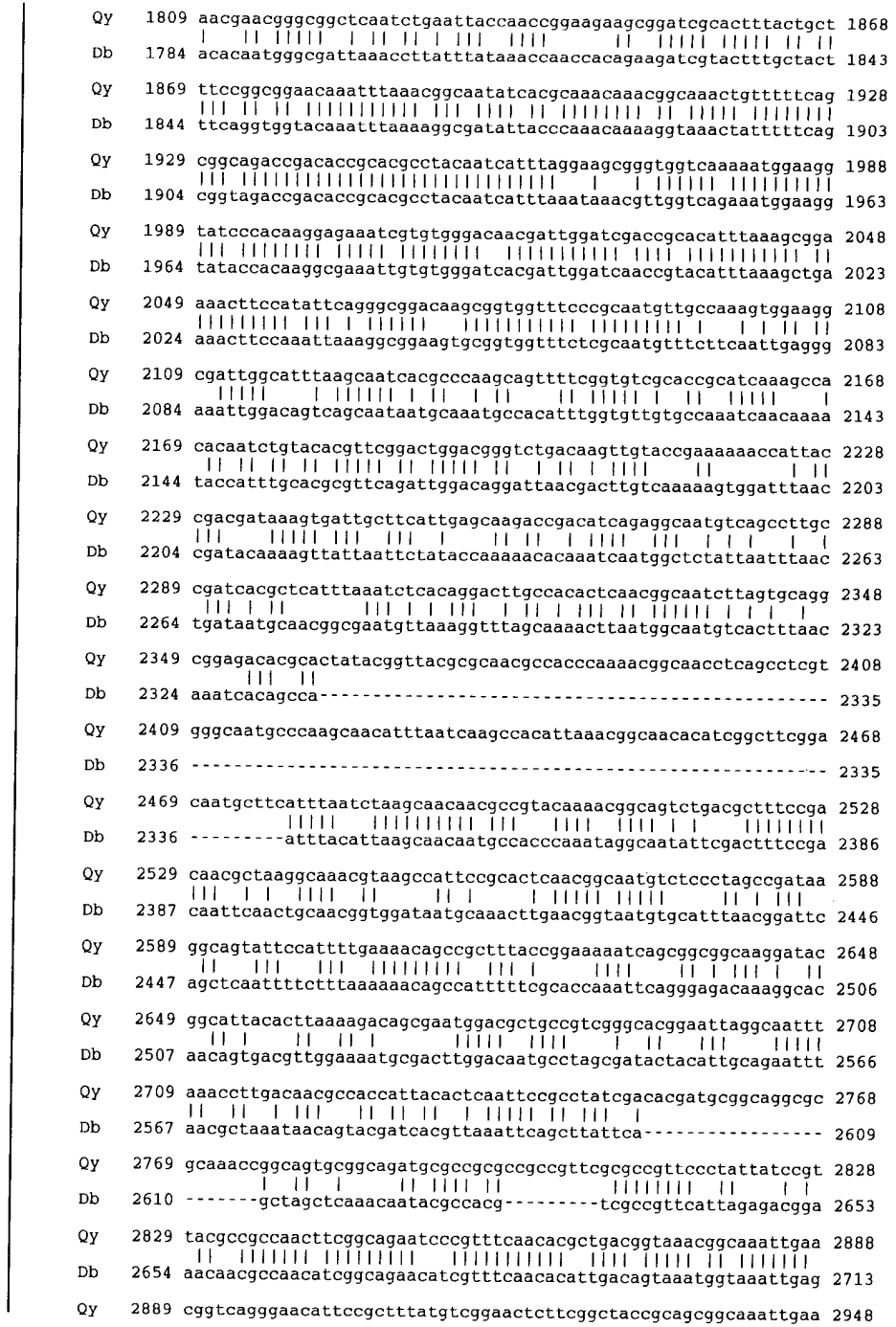
Qy    498 atttgtcacagatgcagaacctgttgagatgaccagttatatggatgggtggaaatacgc 557
          ||| || ||||| || |  ||  |||| |||||     ||||| |||| | |  ||  |
Db    503 attcgttacagaagcggctccaattgatatgacttcgaatatgaatggcagtacttattc 562

Qy    558 tgatttaaataaataccctgatcgtgttcgaatcggagcaggcagacaatattggcggtc 617
           |||  ||  ||||| || || |||||||| |||||  | ||  | || | ||||||
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Qy    618 tgatgaagacgaacccaataaccgcgaaagttcatatcatattgcaagcgcatattcttg 677
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Db    623 tgatcaagacaaaggc------------------gaccaagttgccggtgcatatcatta 664

Qy    678 gctcgtcggtggcaataccttgcacaaaatggatcaggtggtggcacagtcaacttagg 737
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Db   2774 attatccaatgacgctgagggcgattacatattatctgttcgcaacacaggcaaagaacc 2833

Qy   3009 cgtaagtctcgagcaattgacggtagtggaaggaaaagacaacacaccgctgtccgaaaa 3068
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Qy   3129 ccgcaaagacggcgagttccgcctgcataatccggtcaaagaacaagagctttccgacaa 3188
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Qy   3189 actcggcaaggcgggagaaacagaggccgccttgacggcaaaacaggcacaacttgccgc 3248
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Qy   3369 tgccggcattatgcaggcggaggaagagaaaaaacgggtgcaggcggataaagacaccgc 3428
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Qy   3489 ccgcgcccgccgggatttgccgcaaccgcagccccaaccgcaaccccaaccgcagcgc-- 3546
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Qy   3547 -------gacctgatcagccgttatgccaatagcggtttgagtgaattttccgccacgct 3599
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Qy   3897 catcggcatcagcgcgggcgcgggttttagtagcggcagcctttcagacggcatcagagg 3956
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Qy   3957 caaaatccgccgccgcgtgctgcattacggcattcaggcaagataccgcgcaggtttcgg 4016
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Qy   4077 ccgatacgaaaacgtcaatatcgccaccccgggccttgcattcaaccgctaccgcgcggg 4136
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Qy   4137 cattaaggcagattattcattcaaaccggcgcaacacatttccatcacgccttatttgag 4196
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Qy   4197 cctgtcctataccgatgccgcttccggcaaagtccgaacgcgcgtcaataccgccgtatt 4256
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Qy   4257 ggcgcaggatttcggcaaaacccgcagtgcggaatggggcgtaaacgccgaaatcaaagg 4316
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Qy   4317 tttcacgctgtccctccacgctgccgccgccaaggggccgcaattggaagcgcagcacag 4376
Db   4154 tttccaaatttccgcttttatctcaaaatctcaaggttcacaactcggcaaacagcaaaa 4213

Qy   4377 cgcgggcatcaaattaggctaccgctggtaa 4407
Db   4214 tgtgggcgtgaaattgggctatcgttggtaa 4244
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RESULT 12
AAZ12250
ID AAZ12250 standard; DNA; 2991 BP.
XX
AC AAZ12250;
XX
DT 08-OCT-1999 (first entry)
XX
DE Neisseria meningitidis partial ORF1 sequence.
XX
KW Neisseria meningitidis; Neisseria gonorrhoeae; antigen; vaccine;
KW treatment; Neisseria infection; meningitis; septicaemia; gonorrhea; ss.
XX
OS Neisseria meningitidis.
XX

FH	Key	Location/Qualifiers
FT	misc_feature	1316..1317
FT		/*tag= a
FT		/note= "826 unspecified nucleotides are present between these bases"
FT	misc_feature	3005..3006
FT		/*tag= a
FT		/note= "538 unspecified nucleotides are present between these bases"

XX
PN WO9924578-A2.
XX
PD 20-MAY-1999.
XX
PF 09-OCT-1998; 98WO-IB01665.
XX
PR 01-SEP-1998; 98GB-0019016.
PR 06-NOV-1997; 97GB-0023516.
PR 14-NOV-1997; 97GB-0024190.
PR 18-NOV-1997; 97GB-0024386.
PR 27-NOV-1997; 97GB-0025158.
PR 10-DEC-1997; 97GB-0026147.
PR 14-JAN-1998; 98GB-0000759.
XX
PA (CHIR-) CHIRON SPA.
XX
PI Grandi G, Masignani V, Pizza M, Rappuoli R, Scarlato V;

XX
DR WPI; 1999-327407/27.
DR P-PSDB; AAY38822.
XX
PT Proteins from Neisseria meningitidis and N. gonorrhoeae useful for
PT diagnosis, treatment and prevention of infection
XX
PS Claim 9; Page 358-359; 524pp; English.
XX
CC Nucleotide sequences AAZ11972-Z12358 represent open reading frames
CC (ORFs) of Neisseria meningitidis and N. gonorrhoeae which encode
CC antigenic proteins (see AAY38499-Y38944). The antigenic proteins, their
CC fragments, their nucleic acids and antibodies are used for diagnosis,
CC prevention (as vaccines) or treatment of Neisseria infections,
CC such as meningitis, septicaemia and gonorrhea. Both organisms
CC are closely related. Fragments of the nucleic acids are useful
CC as hybridisation probes and antisense reagents.
XX
SQ Sequence 2991 BP; 840 A; 775 C; 694 G; 616 T; 66 other;

Query Match 27.1%; Score 1193.2; DB 20; Length 2991;
Best Local Similarity 62.9%; Pred. No. 0;
Matches 2781; Conservative 10; Mismatches 186; Indels 1444; Gaps 7;

```
Qy      1 atgaaaacaaccgacaaacggacaaccgaaacacaccgcaaagcccctaaaaccggccgc 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||| ||||||| |||
Db      1 atgaaaacaaccgacaaacggacaaccgaaacacaccgcaaagccccgaaaaccggtcgc 60

Qy     61 atccgcttctcgcccgcttacttagccatatgcctgtcgttcggcattctgccccaagcc 120
          |||||||||||  | ||||||||||||||||||||||||||||||||||||||||| |||||||||
Db     61 atccgcttctcngctgcttacttagccatatgcctgtcgttcggcattcttccccaagcc 120

Qy    121 cgggcgggacacacttatttcggcatcaactaccaatactatcgcgactttgccgaaaat 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
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Qy    181 aaaggcaagtttgcagtcggggcgaaagatattgaggtttacaacaaaaaaggggagttg 240
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Qy    241 gtcggcaaatcgatgacgaaagccccgatgattgatttttctgtggtatcgcgtaacggc 300
          |||||||||||| ||||| ||||||||||||||||||||||||||||||| ||||||||||||
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Qy    301 gtggcggcattggcgggcg-atcaatatattgtgagcgtggcacataacggcggctataa 359
          |||||||||||||| ||||| ||||||||||||||||||||||||||||||||||||||||||
Db    301 gtggcggcattggtgggcgtatcaatatattgtgagcgtggcacataacggcggctataa 360

Qy    360 caatgttgattttggtgcggagggaagcaat---cccgatcagcaccgctttttcttacca 416
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Qy    417 aattgtgaaaagaaataattataaagcagggactaacggccatccttatggcggcgatta 476
          |||||||||| | ||||||||||||||||||||||| ||||||||||||||||||||||||
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Qy    477 tcatatgccgcgtttgcacaaatttgtcacagatgcagaacctgttgagatgaccagtta 536
          |||||||||||||||||| ||||:|||||||||||||||||||||||| ||||||||||
Db    481 tcatatgccgcgtttgcataaatwtgtcacagatgcagaacctgttgaaatgaccagtta 540

Qy    537 tatggatgggtggaaatacgctgatttaaataaataccctgatcgtgttcgaatcggagc 596
          |||||||||| |||||||    |||  |||||| |||||||| |||||||| || || ||
Db    541 tatggatgggcggaaatatatcgatcaaaataattaccctgaccgtgttcgtattggggc 600

Qy    597 aggcagacaatattggcggtctgatgaagacgaacccaataaccgcgaaagttcatatca 656
          ||||||| |||||||||||| |||||||||||| || ||||||||||||||||||||||||
Db    601 aggcaggcaatattggcgatctgatgaagatgagcccaataaccgcgaaagttcatatca 660

Qy    657 tattgcaagcgcatattcttggctcgtcggtggcaatacctttgcacaaaatggatcagg 716
          |||||||||
Db    661 tattgcaag---------------------------------------------------- 669
```

```
Qy    717 tggtggcacagtcaacttaggtagcgaaaaaattaaacatagcccatatggtttttttacc 776
                                                                 |
Db    670 ----------------------------------------tnnnnnnnnnnnnnnnnnnnn 690

Qy    777 aacaggaggctcatttggcgacagtggctcaccaatgtttatctatgatgcccaaaagca 836
                                                  ||||||||||||||||||||||||||||||||||
Db    691 nnnnnnnnnnnnnnnnnnnnnnnnnggctcaccaatgtttatctatgatgcccaaaagca 750

Qy    837 aaagtggttaattaatggggtattgcaaacaggcaacccctatataggaaaaagcaatgg 896
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Db    751 aaagtggttaattaatggggtattgcaaacgggcaacccctatataggaaaaagcaatgg 810

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Qy    957 agtattctacgaaccacatcaaaatgggaaatacttttttaacgacaataataatggcgc 1016
          |||||||||||||||| |||||||||||||||| ||||||||| |||||||||| |
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Qy   1017 aggaaaaatcgatgccaaacataaacactattctctaccttatagattaaaaacacgaac 1076
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Qy   1077 cgttcaattgtttaatgtttctttatccgagacagcaagagaacctgtttatcatgctgc 1136
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Qy   1137 aggtggggtcaacagttatcgacccagactgaataatggagaaaatatttccttttattga 1196
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Db   1111 cgaaggaaaaggcgaattgatacttaccagcaacatcaatcaaggtgctggaggattata 1170

Qy   1257 ttttgagggtaatttttacggtctcgcctaaaaacaacgaaacgtggcaaggcgcgggcgt 1316
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Db   1171 tttccaaggagattttacggtctcgcctgaaaataacgaaacttggcaaggcgcgggcgt 1230

Qy   1317 tcatatcagtgatggcagtaccgttacttggaaagtaaacggcgtggcaaacgaccgcct 1376
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Db   1231 tcatatcagtgaagacagtaccgttacttggaaagtaaacggcgtggcaaacgaccgcct 1290

Qy   1377 gtccaaaatcggcaaaggcacgctgctggttcaagccaaaggggaaaaccaaggctcggt 1436
          |||||||||||||||||||||||
Db   1291 gtccaaaatcggcaaaggcacgct---------------------------------- 1314

Qy   1437 cagcgtgggcgacggtaaagtcatcttagatcagcaggcggacgatcaaggcaaaaaaca 1496

Db   1315 ---------------------------------------------------------- 1314

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Db   1315 ---------------------------------------------------------- 1314

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Db   1315 ---------------------------------------------------------- 1314

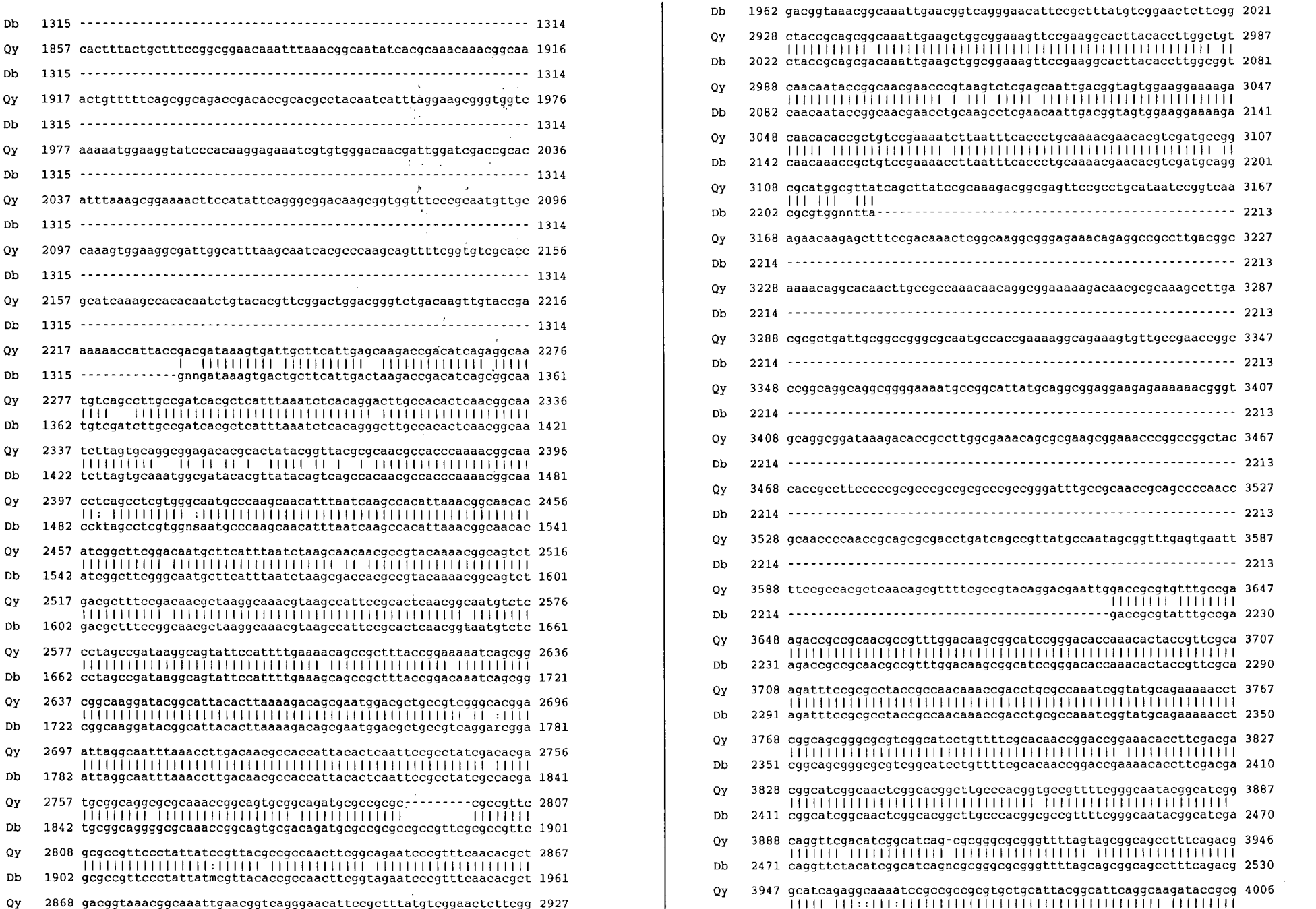
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Db   1315 ---------------------------------------------------------- 1314

Qy   1737 caataacaacaacttggatagcaaaaaagaaattgcctacaacggttggtttggcgagaa 1796

Db   1315 ---------------------------------------------------------- 1314

Qy   1797 agatgcaaccaaaacgaacgggcggctcaatctgaattaccaaccggaagaagcggatcg 1856
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```
Qy   4007 caggtttcggcggattcggcatcgaaccgcacatcggcgcaacgcgctatttcgtccaaa 4066
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Db   2591 ccggtttcggcggattcggcatcgaaccgcacatcggcgcaacgcgctatttcgtccaaa 2650

Qy   4067 aagcggattaccgatacgaaaacgtcaatatcgccacccccgggccttgcattcaaccgct 4126
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Db   2771 cttatttgagcctgtcctataccgatgccgcttcgggcaaagtccgaacacgcgtcaata 2830

Qy   4247 ccgccgtattggcgcaggatttcggcaaaacccgcagtgcggaatggggcgtaaacgccg 4306
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Db   2831 ccgccgtattggctcaggatttcggcaaaacccgcagtgcggaatggggcgtaaacgccg 2890

Qy   4307 aaatcaaaggtttcacgctgtccctccacgctgccgccgccaaggggccgcaattggaag 4366
          |||||||||||||||||||||||||||||||||||||||| || |||||| ||||||
Db   2891 aaatcaaaggtttcacgctgtccctccacgctgccgccgccaaaggcccgcaactggaag 2950

Qy   4367 cgcagcacagcgcgggcatcaaattaggctaccgctggtaa 4407
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Db   2951 cgcaacacagcgcgggcatcaaattaggctaccgctggtaa 2991
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RESULT 13
AAA81400
ID AAA81400 standard; DNA; 1312 BP.
XX
AC AAA81400;
XX
DT 04-DEC-2000 (first entry)
XX
DE N. meningitidis MenB 5' polynucleotide sequence ORF number 76.
XX
KW Neisseria meningitidis; Neisseria gonorrheae; genome; immunogenic;
KW antigen; vaccine; diagnosis; infection; antibacterial; identification;
KW Meningococcus B; MenB; ds.
XX
OS Neisseria meningitidis.
XX
PN WO200022430-A2.
XX
PD 20-APR-2000.
XX
PF 08-OCT-1999; 99WO-US23573.
XX
PR 09-OCT-1998; 98US-0103794.
PR 30-APR-1999; 99US-0132068.
XX
PA (CHIR) CHIRON CORP.
XX
PI Frazer CM, Hickey E, Peterson J, Tettelin H, Venter JC;
PI Masignani V, Galeotti C, Mora M, Ratti G, Scarselli M, Scarlato V;
PI Rappuoli R, Pizza M;
XX
DR WPI; 2000-318079/27.
XX
PT Isolated nucleotide sequences of Neisseria meningitidis which can be
PT used in the diagnosis and treatment of N. meningitidis infection and
PT other Neisserial infections, for example, N.gonorrhoea -
XX
PS Disclosure; Page 218-219; 1760pp; English.
XX
CC The present invention describes methods of obtaining immunogenic
CC proteins from Neisseria genomic sequences. AAA81453 to AAA82414
CC represent specifically claimed Neisseria meningitidis genomic DNA
CC sequences; AAA81260 to AAA81303 and AAB25620 to AAB25663 represent
CC Neisseria DNA sequences and their corresponding proteins; AAA81254 to
CC AAA81259 and AAA81304 to AAA81321 represent PCR primers used in the
CC isolation of Neisseria meningitidis DNA sequences; and AAA81322 to
CC AAA81452 represent Neisseria meningitidis MenB polynucleotide ORF
CC sequences, which are all used in the exemplification of the present
CC invention. The nucleic acid sequences, protein sequences, and antibodies
CC against them, can be used in the manufacture of a composition. The
CC composition can be used as a medicament (or in the manufacture of a
CC medicament) for treating, preventing or diagnosing infection due to
CC Neisserial bacteria. For example, some of the identified proteins could
CC be components of vaccines against Meningococcus B; against all serotypes;
CC and/or against all pathogenic Neissariae. Identification of sequences
CC from the bacterium will also facilitate production of biological probes,
CC particularly organism-specific probes. Attempts to make efficacious
CC Meningococcus B vaccines have failed mainly due to antigen tolerance.
CC Multivalent vaccines have also been tried but none have successfully
CC overcome antigenic variability. The provision of further, complete
CC sequences may provide an opportunity to identify secreted or surface
CC exposed proteins that may be presumed targets for the immune system and
CC which are not antigenically variable or at least more conserved than
CC other more variable regions.
XX
SQ Sequence 1312 BP; 402 A; 261 C; 291 G; 308 T; 50 other;

Query Match 23.2%; Score 1020.4; DB 21; Length 1312;
Best Local Similarity 85.0%; Pred. No. 2.1e-285;
Matches 1193; Conservative 3; Mismatches 114; Indels 93; Gaps 4;

```
Qy      1 atgaaaacaaccgacaaacggacaaccgaaacacaccgcaaagcccctaaaaccggccgc 60
          |||||||||||||||||||||||||||||||||||||||||||||||||| |||||||| |||
Db      1 atgaaaacaaccgacaaacggacaaccgaaacacaccgcaaagccccgaaaaccggtcgc 60

Qy     61 atccgcttctcgcccgcttacttagccatatgcctgtcgttcggcattctgccccaagcc 120
          |||||||||||| | ||||||||||||||||||||||||||||||||||| |||||||||
Db     61 atccgcttctcg-ctgcttacttagccatatgcctgtcgttcggcattcttccccaagcc 119

Qy    121 cgggcgggacacacttatttcggcatcaactaccaatactatcgcgactttgccgaaaat 180
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Db    120 tgggcgggacacacttatttcggcatcaactaccaatactatcgcgactttgccgaaaat 179

Qy    181 aaaggcaagtttgcagtcggggcgaaagatattgaggtttacaacaaaaaaggggagttg 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    180 aaaggcaagtttgcagtcggggcgaaagatattgaggtttacaacaaaaaaggggagttg 239

Qy    241 gtcggcaaatcgatgacgaaagccccgatgattgatttttctgtggtatcgcgtaacggc 300
          |||||||||||| ||||| ||||||||||||||||||||||||||||| ||||||||||||
Db    240 gtcggcaaatcaatgacaaaagccccgatgattgatttttctgtggtgtcgcgtaacggc 299

Qy    301 gtggcggcattggcgggcg-atcaatatattgtgagcgtggcacataacggcggctataa 359
          |||||||||||||| ||||| ||||||||||||||||||||||||||||||||||||||
Db    300 gtggcggcattggtgggcgtatcaatatattgtgagcgtggcacataacggcggctataa 359

Qy    360 caatgttgattttggtgcggagggaagca-atcccgatcagcaccgcttttcttaccaaa 418
          ||| |||||||||||||||| |||| | |||||||||| || || :|| ||||  |||
Db    360 caacgttgattttggtgcggaaggaakaatatcccgatcaacawcgwwttacttataaaa 419

Qy    419 ttgtgaaaagaaataattataaagcagggactaacggccatcctttatggcggcgattatc 478
          |||||||| | ||||||||||||||||||||| ||||||||||||||||||||||||||||
Db    420 ttgtgaaacggaataattataaagcagggactaaaggccatcctttatggcggcgattatc 479

Qy    479 atatgccgcgtttgcacaaatttgtcacagatgcagaacctgttgagatgaccagttata 538
          |||||||||||||||| ||||:|||||||||||||||||||||| ||||||||||||||
Db    480 atatgccgcgtttgcataaatwtgtcacagatgcagaacctgttgaaatgaccagttata 539

Qy    539 tggatgggtggaaatacgctgatttaaataaataccctgatcgtgttcgaatcggagcag 598
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Qy    599 gcagacaatattggcggtctgatgaagacgaacccaataaccgcgaaagttcatatcata 658
          |||| |||||||||||| |||||||||| || ||||||||||||||||||||||||||||
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```

```
Qy    659 ttgcaagcgcatattcttggctcgtcggtggcaataccttgcacaaaatggatcaggtg 718
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Db    660 ttgcaag---------------------------------------------------- 666

Qy    719 gtggcacagtcaacttaggtagcgaaaaaattaaacatagcccatatggtttttaccaa 778
                                          |
Db    667 ------------------------------------tnnnnnnnnnnnnnnnnnnnnn 689

Qy    779 caggaggctcatttggcgacagtggctcaccaatgtttatctatgatgcccaaaagcaaa 838
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Qy    839 agtggttaattaatggggtattgcaaacaggcaacccctatataggaaaaagcaatggct 898
          ||||||||||||||||||||||||| |||||||||||||||||||||||||||||||||
Db    750 agtggttaattaatggggtattgcaaacgggcaacccctatataggaaaaagcaatggct 809

Qy    899 tccagctagttcgtaaagattggttctatgatgaaatctttgctggagatacccattcag 958
          ||||||| ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    810 tccagctggttcgtaaagattggttctatgatgaaatctttgctggagatacccattcag 869

Qy    959 tattctacgaaccacatcaaaatgggaaatacttttttaacgacaataataatggcgcag 1018
          ||||||||||||||| |||||||||||||||| |||||||||| |||||||||||| |||
Db    870 tattctacgaaccacgtcaaaatgggaaatactcttttaacgacgataataatggcacag 929

Qy   1019 gaaaaatcgatgccaaacataaacactattctctaccttatagattaaaaacacgaaccg 1078
          |||||||| |||||||||| ||||| ||||||| ||| ||||||||||||||||||||
Db    930 gaaaaatcaatgccaaacatgaacacaattctctgcctaatagattaaaaacacgaaccg 989

Qy   1079 ttcaattgtttaatgtttctttatccgagacagcaagagaacctgtttatcatgctgcag 1138
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
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Qy   1139 gtggggtcaacagttatcgacccagactgaataatggagaaaatatttcctttattgaca 1198
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Db   1050 gtggtgtcaacagttatcgacccagactgaataatggagaaaatatttcctttattgacg 1109

Qy   1199 aaggaaaaggtgaattgatacttaccagcaacatcaaccaaggcgcgggcggtttgtatt 1258
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Db   1110 aaggaaaaggcgaattgatacttaccagcaacatcaatcaaggtgctggaggattatatt 1169

Qy   1259 ttgagggtaattttacggtctcgcctaaaaacaacgaaacgtggcaaggcgcgggcgttc 1318
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Db   1170 tccaaggagattttacggtctcgcctgaaaataacgaaacttggcaaggcgcgggcgttc 1229

Qy   1319 atatcagtgatggcagtaccgttacttggaaagtaaacggcgtggcaaacgaccgcctgt 1378
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Qy   1379 ccaaaatcggcaaaggcacgctg 1401
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Db   1290 ccaaaatcggcaaaggcacgctg 1312
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RESULT 14
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ID AAA81401 standard; DNA; 891 BP.
XX
AC AAA81401;
XX
DT 04-DEC-2000 (first entry)
XX
DE N. meningitidis MenB internal polynucleotide sequence ORF number 76.
XX
KW Neisseria meningitidis; Neisseria gonorrheae; genome; immunogenic;
KW antigen; vaccine; diagnosis; infection; antibacterial; identification;
KW Meningococcus B; MenB; ds.
XX
OS Neisseria meningitidis.
XX
PN WO200022430-A2.
XX
PD 20-APR-2000.
XX
PF 08-OCT-1999; 99WO-US23573.
XX
PR 09-OCT-1998; 98US-0103794.
PR 30-APR-1999; 99US-0132068.
XX
PA (CHIR) CHIRON CORP.
XX
PI Frazer CM, Hickey E, Peterson J, Tettelin H, Venter JC;
PI Masignani V, Galeotti C, Mora M, Ratti G, Scarselli M, Scarlato V;
PI Rappuoli R, Pizza M;
XX
DR WPI; 2000-318079/27.
XX
PT Isolated nucleotide sequences of Neisseria meningitidis which can be
PT used in the diagnosis and treatment of N. meningitidis infection and
PT other Neisserial infections, for example, N.gonorrhoea -
XX
PS Disclosure; Page 219; 1760pp; English.
XX
CC The present invention describes methods of obtaining immunogenic
CC proteins from Neisseria genomic sequences. AAA81453 to AAA82414
CC represent specifically claimed Neisseria meningitidis genomic DNA
CC sequences; AAA81260 to AAA81303 and AAB25620 to AAB25663 represent
CC Neisseria DNA sequences and their corresponding proteins; AAA81254 to
CC AAA81259 and AAA81304 to AAA81321 represent PCR primers used in the
CC isolation of Neisseria meningitidis DNA sequences; and AAA81322 to
CC AAA81452 represent Neisseria meningitidis MenB polynucleotide ORF
CC sequences, which are all used in the exemplification of the present
CC invention. The nucleic acid sequences, protein sequences, and antibodies
CC against them, can be used in the manufacture of a composition. The
CC composition can be used as a medicament (or in the manufacture of a
CC medicament) for treating, preventing or diagnosing infection due to
CC Neisserial bacteria. For example, some of the identified proteins could
CC be components of vaccines against Meningococcus B; against all serotypes;
CC and/or against all pathogenic Neissariae. Identification of sequences
CC from the bacterium will also facilitate production of biological probes,
CC particularly organism-specific probes. Attempts to make efficacious
CC Meningococcus B vaccines have failed mainly due to antigen tolerance.
CC Multivalent vaccines have also been tried but none have successfully
CC overcome antigenic variability. The provision of further, complete
CC sequences may provide an opportunity to identify secreted or surface
CC exposed proteins that may be presumed targets for the immune system and
CC which are not antigenically variable or at least more conserved than
CC other more variable regions.
XX
SQ Sequence 891 BP; 255 A; 258 C; 202 G; 171 T; 5 other;

Query Match 17.9%; Score 786.8; DB 21; Length 891;
Best Local Similarity 93.3%; Pred. No. 1.2e-217;
Matches 831; Conservative 4; Mismatches 47; Indels 9; Gaps 1;

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Qy   2233 gataaagtgattgcttcattgagcaagaccgacatcagaggcaatgtcagccttgccgat 2292
          |||||||||| |||||||||| |||||||||||||| |||||||||   |||||||||
Db      1 gataaagtgactgcttcattgactaagaccgacatcagcggcaatgtcgatcttgccgat 60

Qy   2293 cacgctcatttaaatctcacaggacttgccacactcaacggcaatcttagtgcaggcgga 2352
          |||||||||||||||||||||| |||||||||||||||||||||||||||   ||
Db     61 cacgctcatttaaatctcacagggcttgccacactcaacggcaatcttagtgcaaatggc 120

Qy   2353 gacacgcactatacggttacgcgcaacgccacccaaaacggcaacctcagcctcgtgggc 2412
          || || |  ||||| || |  | ||||||||||||||||||||: |||||||||| :
Db    121 gatacacgttatacagtcagccacaacgccacccaaaacggcaaccktagcctcgtggns 180

Qy   2413 aatgcccaagcaacatttaatcaagccacattaaacggcaacacatcggcttcggacaat 2472
          |||||||||||||||||||||||||||||||||||||||||||||||||||||| ||||
Db    181 aatgcccaagcaacatttaatcaagccacattaaacggcaacacatcggcttcgggcaat 240

Qy   2473 gcttcatttaatctaagcaacaacgccgtacaaaacggcagtctgacgctttccgacaac 2532
          |||||||||||||||||| || |||||||||||||||||||||||||||||| ||||
Db    241 gcttcatttaatctaagcgaccacgccgtacaaaacggcagtctgacgctttccggcaac 300

Qy   2533 gctaaggcaaacgtaagccattccgcactcaacggcaatgtctccctagccgataaggca 2592
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          |||||||||||||||||||||||||||||||||||| ||||||||||||||||||||||||
Db     301 gctaaggcaaacgtaagccattccgcactcaacggtaatgtctccctagccgataaggca 360

Qy    2593 gtattccattttgaaaacagccgctttaccggaaaaatcagcggcggcaaggatacggca 2652
          |||||||||||||||| |||||||||||||||| ||||||||||||||||||||||||||||
Db     361 gtattccattttgaaagcagccgctttaccggacaaatcagcggcggcaaggatacggca 420

Qy    2653 ttacacttaaaagacagcgaatggacgctgccgtcgggcacggaattaggcaatttaaac 2712
          |||||||||||||||||||||||||||||||||| || :|||||||||||||||||||||
Db     421 ttacacttaaaagacagcgaatggacgctgccgtcaggarcggaattaggcaatttaaac 480

Qy    2713 cttgacaacgccaccattacactcaattccgcctatcgacacgatgcggcaggcgcgcaa 2772
          |||||||||||||||||||||||||||||||||||||||| |||||||||||||| ||||||
Db     481 cttgacaacgccaccattacactcaattccgcctatcgccacgatgcggcaggggcgcaa 540

Qy    2773 accggcagtgcggcagatgcgccgcgc---------cgccgttcgcgccgttccctatta 2823
          |||||||||||| ||||||||||||||         ||||||||||||||||||||||||
Db     541 accggcagtgcgacagatgcgccgcgccgccgttcgcgccgttcgccgccgttccctatta 600

Qy    2824 tccgttacgccgccaacttcggcagaatcccgtttcaacacgctgacggtaaacggcaaa 2883
          |:|||||| |||||||||||||| ||||||||||||||||||||||||||||||||||||
Db     601 tmcgttacaccgccaacttcggtagaatcccgtttcaacacgctgacggtaaacggcaaa 660

Qy    2884 ttgaacggtcagggaacattccgctttatgtcggaactcttcggctaccgcagcggcaaa 2943
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||| ||||
Db     661 ttgaacggtcagggaacattccgctttatgtcggaactcttcggctaccgcagcgacaaa 720

Qy    2944 ttgaagctggcggaaagttccgaaggcacttacaccttggctgtcaacaataccggcaac 3003
          |||||||||||||||||||||||||||||||||||| ||||||||||||||||||||||||
Db     721 ttgaagctggcggaaagttccgaaggcacttacaccttggcggtcaacaataccggcaac 780

Qy    3004 gaacccgtaagtctcgagcaattgacggtagtggaaggaaaagacaacacaccgctgtcc 3063
          ||||| | ||| ||||| ||||||||||||||||||||||||||||| ||||||||||
Db     781 gaacctgcaagcctcgaacaattgacggtagtggaaggaaaagacaacaaaccgctgtcc 840

Qy    3064 gaaaatcttaatttcaccctgcaaaacgaacacgtcgatgccggcgcatgg 3114
          ||||| |||||||||||||||||||||||||||||||||| ||||| |||
Db     841 gaaaaccttaatttcaccctgcaaaacgaacacgtcgatgcaggcgcgtgg 891
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RESULT 15
AAA81402
ID AAA81402 standard; DNA; 781 BP.
XX
AC AAA81402;
XX
DT 04-DEC-2000 (first entry)
XX
DE N. meningitidis MenB 3' polynucleotide sequence ORF number 76.
XX
KW Neisseria meningitidis; Neisseria gonorrheae; genome; immunogenic;
KW antigen; vaccine; diagnosis; infection; antibacterial; identification;
KW Meningococcus B; MenB; ds.
XX
OS Neisseria meningitidis.
XX
PN WO200022430-A2.
XX
PD 20-APR-2000.
XX
PF 08-OCT-1999; 99WO-US23573.
XX
PR 09-OCT-1998; 98US-0103794.
PR 30-APR-1999; 99US-0132068.
XX
PA (CHIR) CHIRON CORP.
XX
PI Frazer CM, Hickey E, Peterson J, Tettelin H, Venter JC;
PI Masignani V, Galeotti C, Mora M, Ratti G, Scarselli M, Scarlato V;
PI Rappuoli R, Pizza M;
XX
DR WPI; 2000-318079/27.
XX
PT Isolated nucleotide sequences of Neisseria meningitidis which can be
PT used in the diagnosis and treatment of N. meningitidis infection and
PT other Neisserial infections, for example, N.gonorrhoea -
XX
PS Disclosure; Page 219; 1760pp; English.
XX
CC The present invention describes methods of obtaining immunogenic
CC proteins from Neisseria genomic sequences. AAA81453 to AAA82414
CC represent specifically claimed Neisseria meningitidis genomic DNA
CC sequences; AAA81260 to AAA81303 and AAB25620 to AAB25663 represent
CC Neisseria DNA sequences and their corresponding proteins; AAA81254 to
CC AAA81259 and AAA81304 to AAA81321 represent PCR primers used in the
CC isolation of Neisseria meningitidis DNA sequences; and AAA81322 to
CC AAA81452 represent Neisseria meningitidis MenB polynucleotide ORF
CC sequences, which are all used in the exemplification of the present
CC invention. The nucleic acid sequences, protein sequences, and antibodies
CC against them, can be used in the manufacture of a composition. The
CC composition can be used as a medicament (or in the manufacture of a
CC medicament) for treating, preventing or diagnosing infection due to
CC Neisserial bacteria. For example, some of the identified proteins could
CC be components of vaccines against Meningococcus B; against all serotypes;
CC and/or against all pathogenic Neissariae. Identification of sequences
CC from the bacterium will also facilitate production of biological probes,
CC particularly organism-specific probes. Attempts to make efficacious
CC Meningococcus B vaccines have failed mainly due to antigen tolerance.
CC Multivalent vaccines have also been tried but none have successfully
CC overcome antigenic variability. The provision of further, complete
CC sequences may provide an opportunity to identify secreted or surface
CC exposed proteins that may be presumed targets for the immune system and
CC which are not antigenically variable or at least more conserved than
CC other more variable regions.
XX
SQ Sequence 781 BP; 183 A; 256 C; 201 G; 137 T; 4 other;

Query Match 16.7%; Score 737.4; DB 21; Length 781;
Best Local Similarity 97.1%; Pred. No. 2.4e-203;
Matches 758; Conservative 3; Mismatches 19; Indels 1; Gaps 1;

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Qy    3628 ttggaccgcgtgtttgccgaagaccgccgcaacgccgtttggacaagcggcatccgggac 3687
           || |||||||| ||||||||||||||||||||||||||||||||||||||||||||||||
Db       1 ttagaccgcgtatttgccgaagaccgccgcaacgccgtttggacaagcggcatccgggac 60

Qy    3688 accaaacactaccgttcgcaagatttccgcgcctaccgccaacaaaccgacctgcgccaa 3747
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      61 accaaacactaccgttcgcaagatttccgcgcctaccgccaacaaaccgacctgcgccaa 120

Qy    3748 atcggtatgcagaaaaacctcggcagcgggcgcgtcggcatcctgttttcgcacaaccgg 3807
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     121 atcggtatgcagaaaaacctcggcagcgggcgcgtcggcatcctgttttcgcacaaccgg 180

Qy    3808 accggaaacaccttcgacgacggcatcggcaactcggcacggcttgcccacggtgccgtt 3867
           |||| ||||||||||||||||||||||||||||||||||||||||||||||| ||||||
Db     181 accgaaaacaccttcgacgacggcatcggcaactcggcacggcttgcccacggcgccgtt 240

Qy    3868 ttcgggcaatacggcatcggcaggttcgacatcggcatcag-cgcgggcgcgggttttag 3926
           |||||||||||||||||| ||||||| |||||||||||| ||||||||||||||||||
Db     241 ttcgggcaatacggcatcgacaggttctacatcggcatcagncgcgggcgcgggttttag 300

Qy    3927 tagcggcagcctttcagacggcatcagaggcaaaatccgccgccgcgtgctgcattacgg 3986
           |||||||||||||||||||||||| |||::|||:||||||||||||||||||||||||||
Db     301 cagcggcagcctttcagacggcatcggagsmaaawtccgccgccgcgtgctgcattacgg 360

Qy    3987 cattcaggcaagataccgcgcaggtttcggcggattcggcatcgaaccgcacatcggcgc 4046
           |||||||||| |||||||||| ||||||||||||||||||||||||||||||||||||||
Db     361 cattcaggcacgataccgcgccggtttcggcggattcggcatcgaaccgcacatcggcgc 420

Qy    4047 aacgcgctatttcgtccaaaaagcggattaccgatacgaaaacgtcaatatcgccacccc 4106
           |||||||||||||||||||||||||||||||| ||||||||||||||||||||||||||
Db     421 aacgcgctatttcgtccaaaaagcggattaccgctacgaaaacgtcaatatcgccacccc 480

Qy    4107 gggccttgcattcaaccgctaccgcgcgggcattaaggcagattattcattcaaaccggc 4166
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
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Db    481 cggccttgcattcaaccgctaccgcgcgggcattaaggcagattattcattcaaaccggc 540

Qy   4167 gcaacacatttccatcacgccttatttgagcctgtcctataccgatgccgcttccggcaa 4226
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||| |||||
Db    541 gcaacacatttccatcacgccttatttgagcctgtcctataccgatgccgcttcgggcaa 600

Qy   4227 agtccgaacgcgcgtcaataccgccgtattggcgcaggatttcggcaaaaacccgcagtgc 4286
          ||||||||| |||||||||||||||||||||| |||||||||||||||||||||||||||
Db    601 agtccgaacacgcgtcaataccgccgtattggctcaggatttcggcaaaaacccgcagtgc 660

Qy   4287 ggaatggggcgtaaacgccgaaatcaaaggtttcacgctgtccctccacgctgccgccgc 4346
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    661 ggaatggggcgtaaacgccgaaatcaaaggtttcacgctgtccctccacgctgccgccgc 720

Qy   4347 caaggggccgcaattggaagcgcagcacagcgcgggcatcaaattaggctaccgctggta 4406
          ||| || |||||| |||||||||| ||||||||||||||||||||||||||||||||||
Db    721 caaaggcccgcaactggaagcgcaacacagcgcgggcatcaaattaggctaccgctggta 780

Qy   4407 a 4407
          |
Db    781 a 781
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RESULT 16
AAT88142
ID AAT88142 standard; DNA; 969 BP.
XX
AC AAT88142;
XX
DT 11-MAY-1998 (first entry)
XX
DE H. influenzae Hap autotransporter membrane integration region DNA.
XX
KW Hap gene; autotransporter; Gram-negative bacteria; diagnostic; therapy;
KW surface presented polypeptide; ss.
XX
OS Haemophilus influenzae.
XX
PN WO9735022-A1.
XX
PD 25-SEP-1997.
XX
PF 15-MAR-1996; 96WO-EP01130.
XX
PR 15-MAR-1996; 96WO-EP01130.
XX
PA (PLAC) MAX PLANCK GES FOERDERUNG WISSENSCHAFTEN.
XX
PI Jose J, Maurer J, Meyer TF;
XX
DR WPI; 1997-480227/44.
DR P-PSDB; AAW27705.
XX
PT Presentation of peptide(s) on surface of Gram-negative bacteria -
PT via transformation with vector encoding signal peptide, presented
PT peptide and transporter domain of auto-transporter, producing
PT peptide libraries for epitope mapping
XX
PS Claim 8; Fig 9; 84pp; German.
XX
CC This DNA sequence encodes the H. influenzae Hap autotransporter membrane
CC integration region. This region is involved in a novel method which
CC allows the presentation of stable fusion polypeptides on the surface of
CC Gram-negative bacteria which can be released into the surrounding media.
CC The method can be used to produce a variegated population of
CC surface-presented polypeptides, so that bacteria expressing polypeptides
CC with particular properties can be identified and simultaneously selected,
CC e.g. for epitope mapping or selection of ligands with the highest
CC affinity for antibodies, major histocompatibility complex (MHC) molecules
CC or other components of the immune system. Selected polypeptides can be
CC used diagnostically, e.g. to screen sera or antibody banks, and
CC polypeptide expressing cells may be used as live vaccines. They may also
CC be used therapeutically, e.g. when the polypeptide is an antibody, to
CC remove or concentrate pollutants, inactivate toxins, prepare and process
CC food, prepare washing compositions and label cells. Selected bacteria can
CC be stored, reproduced and replicated on a large scale as individual
CC clones.
XX
SQ Sequence 969 BP; 313 A; 178 C; 212 G; 266 T; 0 other;

Query Match 4.8%; Score 213; DB 18; Length 969;
Best Local Similarity 53.8%; Pred. No. 5.9e-51;
Matches 463; Conservative 0; Mismatches 395; Indels 3; Gaps 1;

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Qy   3547 gacctgatcagccgttatgccaatagcggtttgagtgaattttccgccacgctcaacagc 3606
          ||| |||||||||||||| | ||||| |  ||    ||||| || || ||  | || ||
Db    109 gacttgatcagccgttattcaaatagtgcgttatcagaattatctgcaacagtaaatagt 168

Qy   3607 gttttcgccgtacaggacgaattggaccgcgtgtttgccgaagaccgccgcaacgccgtt 3666
           |  |  | || || || ||||| || ||  | ||||  ||  |    |     |||||
Db    169 atgctttctgttcaagatgaattagatcgtctttttgtagatcaagcacaatctgccgtg 228

Qy   3667 tggacaagcggcatccgggacaccaaacactaccgttcgcaagatttccgcgcctaccgc 3726
          |||||||    |   | ||| |  | || |||   |||  | |  ||||| || || |
Db    229 tggacaaatatcgcacaggataaaagacgctatgattctgatgcgttccgtgcttatcag 288

Qy   3727 caac---aaaccgacctgcgccaaatcggtatgcagaaaaacctcggcagcgggcgcgtc 3783
          || |   ||||  || | || ||||| ||  |||| |||  | | |  |  || ||  |
Db    289 cagcagaaaacgaacttacgtcaaattggggtgcaaaaagccttagctaatggacgaatt 348

Qy   3784 ggcatcctgttttcgcacaaccggaccggaaacaccttcgacgacggcatcggcaactcg 3843
          ||     | || ||||| | |||  | |  || |||| || ||     |    ||
Db    349 ggggcagttttctgcatagccgttcagataatacctttgatgaacaggttaaaaatcac 408

Qy   3844 gcacggcttgcccacggtgccgttttcgggcaatacggcatcggcaggttcgacatcggc 3903
          ||     |  |        | | ||| |  |||||       |||   ||  |  | ||
Db    409 gcgacattaacgatgatgtcgggttttgcccaatatcaatggggcgatttacaatttggt 468

Qy   3904 atcagcgcgggcgcgggttttagtagcggcagcctttcagacggcatcagaggcaaaatc 3963
           | | || |||  ||||  | |||    | |   |  | || |     ||  | |||||
Db    469 gtaaacgtgggaacgggaatcagtgcgagtaaaatggctgaagaacaaagccgaaaaatt 528

Qy   3964 cgccgccgcgtgctgcattacggcattcaggcaagataccgcgcaggtttcggcggattc 4023
          |  ||   | | |  |||| ||| |  | |||||  || |      |||| ||  |||
Db    529 catcgaaaagcgataaattatggcgtgaatgcaagttatcagttccgtttagggcaattg 588

Qy   4024 ggcatcgaaccgcacatcggcgcaacgcgctatttcgtccaaaaagcggattaccgatac 4083
          |||||  | ||  |  | || |  |  |||||||  |  ||   |  |||| | ||
Db    589 ggcattcagccttattttggagttaatcgctattttattgaacgtgaaaattatcaatct 648

Qy   4084 gaaaacgtcaatatcgccaccccgggccttgcattcaaccgctaccgcgcgggcattaag 4143
          ||  | || |   |    || ||  ||||||||| || |||||    || ||||||
Db    649 gaggaagtgagagtgaaaacgcctagccttgcatttaatcgctataatgctggcattcga 708

Qy   4144 gcagattattcattcaaaccggcgcaacacatttccatcacgccttatttgagcctgtcc 4203
          |  |||||| |||| |  ||| |  |  | ||   | | | |||||||||   | |
Db    709 gttgattatacatttactccgacagataatatcagcgttaagccttatttcttcgtcaat 768

Qy   4204 tataccgatgccgcttccggcaaagtccgaacgcgcgtcaataccgccgtattggcgcag 4263
          |||   ||||   |   ||  || || | |||    || |||  | | || |||   ||
Db    769 tatgttgatgtttcaaacgctaacgtacaaaccacggtaaatctcacggtgttgcaacaa 828

Qy   4264 gatttcggcaaaacccgcagtgcggaatggggcgtaaacgccgaaatcaaaggtttcacg 4323
             || ||         |       |||  |||  |||| || |||||   |  ||||
Db    829 ccatttggacgttattggcaaaaagaagtgggattaaaggcagaaattttacatttccaa 888

Qy   4324 ctgtccctccacgctgccgccgccaaggggccgcaattggaagcgcagcacagcgcgggc 4383
           | |||          |      |  | ||  | ||| | |     |||| |  | ||||
Db    889 atttccgcttttatctcaaaatctcaaggttcacaactcggcaaacagcaaaatgtgggc 948

Qy   4384 atcaaattaggctaccgctgg 4404
          | ||||| ||||| || |||
Db    949 gtgaaattgggctatcgttgg 969
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RESULT 17
AAA81520/c
ID   AAA81520 standard; DNA; 30078 BP.
XX
AC   AAA81520;
XX
DT   04-DEC-2000 (first entry)
XX
DE   N. meningitidis partial DNA sequence gnm_67 SEQ ID NO:67.
XX
KW   Neisseria meningitidis; Neisseria gonorrheae; genome; immunogenic;
KW   antigen; vaccine; diagnosis; infection; antibacterial; identification;
KW   Meningococcus B; MenB; ds.
XX
OS   Neisseria meningitidis.
XX
PN   WO200022430-A2.
XX
PD   20-APR-2000.
XX
PF   08-OCT-1999;   99WO-US23573.
XX
PR   09-OCT-1998;   98US-0103794.
PR   30-APR-1999;   99US-0132068.
XX
PA   (CHIR ) CHIRON CORP.
XX
PI   Frazer CM, Hickey E, Peterson J, Tettelin H, Venter JC;
PI   Masignani V, Galeotti C, Mora M, Ratti G, Scarselli M, Scarlato V;
PI   Rappuoli R, Pizza M;
XX
DR   WPI; 2000-318079/27.
XX
PT   Isolated nucleotide sequences of Neisseria meningitidis which can be
PT   used in the diagnosis and treatment of N. meningitidis infection and
PT   other Neisserial infections, for example, N.gonorrhoea -
XX
PS   Claim 7; Page 1411-1420; 1760pp; English.
XX
CC   The present invention describes methods of obtaining immunogenic
CC   proteins from Neisseria genomic sequences. AAA81453 to AAA82414
CC   represent specifically claimed Neisseria meningitidis genomic DNA
CC   sequences; AAA81260 to AAA81303 and AAB25620 to AAB25663 represent
CC   Neisseria DNA sequences and their corresponding proteins; AAA81254 to
CC   AAA81259 and AAA81304 to AAA81321 represent PCR primers used in the
CC   isolation of Neisseria meningitidis DNA sequences; and AAA81322 to
CC   AAA81452 represent Neisseria meningitidis MenB polynucleotide ORF
CC   sequences, which are all used in the exemplification of the present
CC   invention. The nucleic acid sequences, protein sequences, and antibodies
CC   against them, can be used in the manufacture of a composition. The
CC   composition can be used as a medicament (or in the manufacture of a
CC   medicament) for treating, preventing or diagnosing infection due to
CC   Neisserial bacteria. For example, some of the identified proteins could
CC   be components of vaccines against Meningococcus B; against all serotypes;
CC   and/or against all pathogenic Neissariae. Identification of sequences
CC   from the bacterium will also facilitate production of biological probes,
CC   particularly organism-specific probes. Attempts to make efficacious
CC   Meningococcus B vaccines have failed mainly due to antigen tolerance.
CC   Multivalent vaccines have also been tried but none have successfully
CC   overcome antigenic variability. The provision of further, complete
CC   sequences may provide an opportunity to identify secreted or surface
CC   exposed proteins that may be presumed targets for the immune system and
CC   which are not antigenically variable or at least more conserved than
CC   other more variable regions.
XX
SQ   Sequence 30078 BP; 6365 A; 7264 C; 8488 G; 7960 T; 1 other;

  Query Match             4.4%;  Score 192.4;  DB 21;  Length 30078;
  Best Local Similarity   58.1%;  Pred. No. 5.4e-44;
  Matches  359;  Conservative    0;  Mismatches  256;  Indels    3;  Gaps    1;

Qy   1199 aaggaaaaggtgaattgatacttaccagcaacatcaaccaaggcgcgggcggtttgtatt 1258
           ||   || ||    ||| || |       ||||||||||||||||||||||| ||| ||
Db  22235 AAAACAACGGCACTTTGGTATTGGATCAAAACATCAACCAAGGCGCGGGCGGTCTGTTTT 22176

Qy   1259 ttgagggtaattttacggtctcgcctaaaaacaacgaa---acgtggcaaggcgcgggcg 1315
           |  | ||  |||  || |||     || ||| || ||    || |||| ||| |||||
Db  22175 TCAAAGGCGATTACACAGTCAAAGGTATAAATAATGACATCACTTGGCTAGGTGCGGGGA 22116

Qy   1316 ttcatatcagtgatggcagtaccgttacttggaaagtaaacggcgtggcaaacgaccgcc 1375
           || || |    || ||||  |  ||   |||| |||| ||      |     |||| |
Db  22115 TTGATGTTGCCGACGGCAAAAAAGTCGTTTGGCAAGTCAAAAATCCGAATGGCGACAGAT 22056

Qy   1376 tgtccaaaatcggcaaaggcacgctgctggttcaagccaaaggggaaaaccaaggctcgg 1435
           || | ||||||||||||||||  |     |  | | || ||| |  ||||||||
Db  22055 TGGCAAAAATCGGCAAAGGCACATTAGAAATAAACGGCACAGGCGTTAACCAAGGGCAAT 21996

Qy   1436 tcagcgtgggcgacggtaaagtcatcttagatcagcaggcggacgatcaaggcaaaaaac 1495
           | |  || ||||||||||  || ||  |  |||| || || || |   |    |||   |
Db  21995 TAAAAGTCGGCGACGGTACGGTTATTCTGAATCAACAAGCCGATGCCGACAAAAAAGTCC 21936

Qy   1496 aagcctttagtgaaatcggcttggtcagcggcaggggacggtgcaactgaatgccgata 1555
           | || ||     || ||||| | |||||||  | || ||  ||  | | |||      |
Db  21935 AGGCTTTCTCCCAAGTCGGCATTGTCAGCGGACGCGGTACATTGGTATTAAATAGTTCAA 21876

Qy   1556 atcagttcaaccccgacaaactctatttcggctttcgcggcggacgtttggatttgaacg 1615
           ||||| | || ||||| || || |||||||| || || ||||| |||||||||   || |
Db  21875 ATCAGATTAATCCCGATAACCTATATTTCGGTTTCCGTGGCGGTCGTTTGGATGCCAATG 21816

Qy   1616 ggcattcgctttcgttccaccgcattcaaaataccgatgaaggggcgatgattgtcaacc 1675
           |  ||     |  | ||  | | ||| |  ||    ||||||||| |||   ||||||||||
Db  21815 GCAATGACTTGACTTTTGAACACATCCGCAACGTGGATGAAGGCGCGCGCATTGTCAACC 21756

Qy   1676 acaatcaagacaaagaatccaccgttaccattacaggcaataaagatattactacaaccg 1735
           ||||   || | | |  |||||  | ||  | || || ||       |||||     ||
Db  21755 ACAACACAGGCCACGCCTCCACAATCACGCTAACGGGTAAATCTTTGATTACCGATCCCA 21696

Qy   1736 gcaataacaacaacttggatagcaaaaaagaaattgcctacaacggttggtttggcgaga 1795
             | | |   |      |||   ||||  |   ||   || | | | | | | | |
Db  21695 AAACCATCTCTATTCATTATATTCAAAATAATGATGATGACGATGCTGGTTATTACTATT 21636

Qy   1796 aagatgcaaccaaaaacga 1813
           |     | |  ||| |||
Db  21635 ACCGCCCTAGGAAACCGA 21618


RESULT 18
AAF21608/c
ID   AAF21608 standard; DNA; 349980 BP.
XX
AC   AAF21608;
XX
DT   13-MAR-2001 (first entry)
XX
DE   Neisseria meningitidis B nucleotide sequence SEQ ID NO:109.
XX
KW   Neisseria meningitidis; Neisseria gonorrheae; immunogenic; vaccine;
KW   diagnosis; antigen; detection; infection; gene therapy; antibacterial;
KW   ds.
XX
OS   Neisseria meningitidis.
XX
PN   WO200066791-A1.
XX
PD   09-NOV-2000.
XX
PF   08-MAR-2000; 2000WO-US05928.
XX
PR   30-APR-1999;   99US-0132068.
PR   08-OCT-1999;   99WO-US23573.
PR   28-FEB-2000; 2000GB-0004695.
XX
PA   (CHIR ) CHIRON CORP.
PA   (GENO-) INST GENOMIC RES.
XX
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PI Pizza M, Hickey E, Peterson J, Tettelin H, Venter JC, Masignani V;
PI Galeotti C, Mora M, Ratti G, Scarselli M, Scarlato V, Rappuoli R;
PI Frazer CM, Grandi G;
XX
DR WPI; 2000-647603/62.
XX
PT Neisseria meningitidis B full length genome sequence and open reading
PT frames are used to detect, treat and prevent Neisserial infections -
XX
PS Claim 7; Appendix A; 692pp; English.
XX
CC The present invention describes the full length genome of
CC Neisseria meningitidis B (NMB). The sequences in AAF21544 and AAF21607
CC to AAF21613 represent fragments of the NMB genomic sequence, as the
CC sequence was too long to go in a record on its own it was split into 8
CC sequences which overlap each other at the beginning and end of each
CC sequence by 49980 bp (i.e. the last 49980 bp of AAF21544 is repeated at
CC the beginning of AAF21607, the last 49980 bp of AAF21607 are repeated at
CC the beginning of AAF21608, and so on). AAF21545 to AAF21588 encode the
CC Neisseria proteins given in AAB58550 to AAB58593, and AAF21589 to
CC AAF21606 represent PCR primers which are used in the exemplification of
CC the present invention. The NMB genome and fragments from it have
CC antibacterial activity, and can be used in vaccines and gene therapy.
CC Neisseria nucleic acids, proteins and/or antibodies which binds to the
CC proteins can be used in compositions for treating or preventing infection
CC due to Neisserial bacteria or as a diagnostic reagent for detecting the
CC presence of Neisserial bacteria or of antibodies raised to Neisserial
CC bacteria. Computers, computer memory, computer storage medium or computer
CC databases can be used in a search to identify open reading frames (ORFs)
CC or coding sequences within the NMB genome. The DNA sequences provide
CC further opportunities to find antigenic or immunogenic proteins which are
CC more effective in vaccines than the outer membrane proteins currently
CC used.
XX
SQ Sequence 349980 BP; 82523 A; 82940 C; 96712 G; 87805 T; 0 other;

Query Match 4.4%; Score 192.4; DB 21; Length 349980;
Best Local Similarity 58.1%; Pred. No. 2.7e-43;
Matches 359; Conservative 0; Mismatches 256; Indels 3; Gaps 1;

```
Qy   1199 aaggaaaaggtgaattgatacttaccagcaacatcaaccaaggcgcgggcggtttgtatt 1258
          ||   || ||    ||| || |       ||||||||||||||||||||||||| ||| ||
Db 130037 AAAACAACGGCACTTTGGTATTGGATCAAAACATCAACCAAGGCGCGGGCGGTCTGTTTT 129978

Qy   1259 ttgagggtaatttttacggtctcgcctaaaaacaacgaa---acgtggcaaggcgcgggcg 1315
          |  | ||  |||  || |||     || ||| || ||    || |||| ||| |||||
Db 129977 TCAAAGGCGATTACACAGTCAAAGGTATAAATAATGACATCACTTGGCTAGGTGCGGGGA 129918

Qy   1316 ttcatatcagtgatggcagtaccgttacttggaaagtaaacggcgtggcaaacgaccgcc 1375
          || || |    || ||||  |  ||   |||| |||| ||      |     |||| |
Db 129917 TTGATGTTGCCGACGGCAAAAAAGTCGTTTGGCAAGTCAAAAATCCGAATGGCGACAGAT 129858

Qy   1376 tgtccaaaatcggcaaaggcacgctgctggttcaagccaaaggggaaaaccaaggctcgg 1435
          || | ||||||||||||||||  |     |  | | || ||| |  ||||||||
Db 129857 TGGCAAAAATCGGCAAAGGCACATTAGAAATAAACGGCACAGGCGTTAACCAAGGGCAAT 129798

Qy   1436 tcagcgtgggcgacggtaaagtcatcttagatcagcaggcggacgatcaaggcaaaaaac 1495
          | |  || ||||||||||  || ||  |  |||| || || || |   |  . |||   |
Db 129797 TAAAAGTCGGCGACGGTACGGTTATTCTGAATCAACAAGCCGATGCCGACAAAAAAGTCC 129738

Qy   1496 aagcctttagtgaaatcggcttggtcagcggcaggggacggtgcaactgaatgccgata 1555
          | || ||     || ||||| | ||||||||  | || ||  ||  | | |||      |
Db 129737 AGGCTTTCTCCCAAGTCGGCATTGTCAGCGGACGCGGTACATTGGTATTAAATAGTTCAA 129678

Qy   1556 atcagttcaaccccgacaaactctatttcggctttcgcggcggacgtttggatttgaacg 1615
          ||||| | || ||||| || || |||||||| || || ||||| |||||||||   || |
Db 129677 ATCAGATTAATCCCGATAACCTATATTTCGGTTTCCGTGGCGGTCGTTTGGATGCCAATG 129618

Qy   1616 ggcattcgctttcgttccaccgcattcaaaataccgatgaaggggcgatgattgtcaacc 1675
          |  ||    |  | ||  | | ||| |  ||    |||||||| |||   ||||||||||
Db 129617 GCAATGACTTGACTTTTGAACACATCCGCAACGTGGATGAAGGCGCGCGCATTGTCAACC 129558
```

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Qy   1676 acaatcaagacaaagaatccaccgttaccattacaggcaataaagatattactacaaccg 1735
          ||||   || | | |  ||||| | ||  | || || ||       |||||     ||
Db 129557 ACAACACAGGCCACGCCTCCACAATCACGCTAACGGGTAAATCTTTGATTACCGATCCCA 129498

Qy   1736 gcaataacaacaacttggatagcaaaaagaaattgcctacaacggttggtttggcgaga 1795
            |  | |   |      |||   ||||  |   ||   || | | | | | | |
Db 129497 AAACCATCTCTATTCATTATATTCAAAATAATGATGATGACGATGCTGGTTATTACTATT 129438

Qy   1796 aagatgcaaccaaaaacga 1813
          |     | |  ||| |||
Db 129437 ACCGCCCTAGGAAACCGA 129420
```

RESULT 19
AAZ54326
ID AAZ54326 standard; DNA; 4296 BP.
XX
AC AAZ54326;
XX
DT 21-MAR-2000 (first entry)
XX
DE Neisseria meningitidis ORF 759 partial DNA sequence SEQ ID NO:2601.
XX
KW Neisseria meningitidis; Neisseria gonorrheae; antigen; vaccine;
KW antigenic; diagnosis; immunogenic; infection; meningitis; septicaemia;
KW antibacterial; gene therapy; ds..
XX
OS Neisseria meningitidis.
XX
PN WO9957280-A2.
XX
PD 11-NOV-1999.
XX
PF 30-APR-1999; 99WO-US09346.
XX
PR 01-MAY-1998; 98US-0083758.
PR 31-JUL-1998; 98US-0094869.
PR 02-SEP-1998; 98US-0098994.
PR 02-SEP-1998; 98US-0099062.
PR 09-OCT-1998; 98US-0103749.
PR 09-OCT-1998; 98US-0103794.
PR 09-OCT-1998; 98US-0103796.
PR 25-FEB-1999; 99US-0121528.
XX
PA (CHIR) CHIRON CORP.
PA (GENO-) INST GENOMIC RES.
XX
PI Fraser C, Galeotti C, Grandi G, Hickey E, Masignani V, Mora M;
PI Petersen J, Pizza M, Rappuoli R, Ratti G, Scalato E, Scarselli M;
PI Tettelin H, Venter JC;
XX
DR WPI; 2000-062150/05.
DR P-PSDB; AAY75564.
XX
PT Novel Neisserial polypeptides predicted to be useful antigens for
PT vaccines and diagnostics -
XX
PS Claim 7; Page 1232-1234; 1453pp; English.
XX
CC AAZ53015 to AAZ54536, AAZ54577 to AAZ54615, and AAY75253 to AAY75941
CC represent novel Neisseria meningitis and N. gonorrhoae polynucleotides
CC and polypeptides. AAZ54537 to AAZ54576 and AAZ54616 to AAZ55473 represent
CC PCR primers used in the exemplification of the present invention. The
CC polypeptides, the polynucleotides, antibodies and compositions of
CC the invention can be used as vaccines, as diagnostic reagents, and as
CC immunogenic compositions. The polypeptides can be used in the
CC manufacture of medicaments for treating or preventing infection due to
CC Neisserial bacteria (e.g. meningitis and septicaemia), to detect the
CC presence of Neisseria bacteria, or to raise antibodies. They may also
CC be used to screen for agonists or antagonists which may themselves
CC have use as antibacterial agents. The polynucleotides of the invention
CC may also be used in gene therapy protocols.
XX

SQ Sequence 4296 BP; 1192 A; 1470 C; 959 G; 675 T; 0 other;

Query Match 4.1%; Score 180.8; DB 21; Length 4296;
Best Local Similarity 61.3%; Pred. No. 3.5e-41;
Matches 309; Conservative 0; Mismatches 192; Indels 3; Gaps 1;

```
Qy   1212 attgatacttaccagcaacatcaaccaaggcgcgggcggtttgtattttgagggtaatttt 1271
          | |||| ||  |   ||| |||||||||||||| ||||  ||| | || ||  | || ||
Db   1074 actgatgctggcagacaatatcaaccaaggcgcaggcgcattgcagttcgacagcaacttt 1133

Qy   1272 tacggtctcgcctaaaaacaacgaaacgtggcaaggcgcgggcgttcatatcagtgatgg 1331
           || |||     ||||||| ||   || |||||||| || ||||||    |    || ||
Db   1134 caccgtcgtcggtaaaaaccac---acatggcaaggtgcaggcgttatcgtagccgacgg 1190

Qy   1332 cagtaccgttacttggaaagtaaacggcgtggcaaacgaccgcctgtccaaaatcggcaa 1391
           ||    |||    ||| |||| | |  |     |  |||||| || |||||| | |||
Db   1191 caaacgcgtcttctggcaagtcagcaaccccaaaggcgaccggctctccaaactgggcgc 1250

Qy   1392 aggcacgctgctggttcaagccaaaggggaaaaccaaggctcggtcagcgtgggcgacgg 1451
          |||||||||  | |   | |   ||||    ||||| |||    ||||| | || || ||
Db   1251 aggcacgcttatcgccaacggacaaggcatcaaccagggcgacatcagcatcggggaagg 1310

Qy   1452 taaagtcatcttagatcagcaggcggacgatcaaggcaaaaaacaagcctttagtgaaat 1511
           |  ||| |  | |  ||  | || |      | ||||  |||||||| || |   || |
Db   1311 cactgtcgtactcgcccaaaaagctgcttcagacggcagcaaacaagcattcaaccaagt 1370

Qy   1512 cggcttggtcagcggcaggggcacggtgcaactgaatgccgataatcagttcaaccccga 1571
          ||||  |  ||||||||||| ||||     ||    | |    | ||  |||| |||||
Db   1371 cggcatcaccagcggcaggggcacggccgtcctcgccgacagccagcaaatcaaacccga 1430

Qy   1572 caaactctatttcggctttcgcggcggacgtttggatttgaacgggcattcgctttcgtt 1631
           || ||||||||||||||  | ||||||||  | ||  | |||||  |   ||| | ||
Db   1431 aaacctctatttcggcttcaggggcggacggctcgacctcaacggcaacaaccttgcctt 1490

Qy   1632 ccaccgcattcaaaataccgatgaaggggcgatgattgtcaaccacaatcaagacaaaga 1691
             ||  || |   || | || |  || |||   || ||||| ||||| |  ||| |||
Db   1491 tacccatatccgccatgcggacggcggcgcgcaaatcgtcaatcacaaccctgaccaagc 1550

Qy   1692 atccaccgttaccattacaggcaa 1715
           | ||  | ||  | || |||||
Db   1551 cgcgacactgacgctgaccggcaa 1574
```

RESULT 20
AAA81472/c
ID AAA81472 standard; DNA; 16526 BP.
XX
AC AAA81472;
XX
DT 04-DEC-2000 (first entry)
XX
DE N. meningitidis partial DNA sequence gnm_20 SEQ ID NO:20.
XX
KW Neisseria meningitidis; Neisseria gonorrheae; genome; immunogenic;
KW antigen; vaccine; diagnosis; infection; antibacterial; identification;
KW Meningococcus B; MenB; ds.
XX
OS Neisseria meningitidis.
XX
PN WO200022430-A2.
XX
PD 20-APR-2000.
XX
PF 08-OCT-1999; 99WO-US23573.
XX
PR 09-OCT-1998; 98US-0103794.
PR 30-APR-1999; 99US-0132068.
XX
PA (CHIR) CHIRON CORP.
XX
PI Frazer CM, Hickey E, Peterson J, Tettelin H, Venter JC;
PI Masignani V, Galeotti C, Mora M, Ratti G, Scarselli M, Scarlato V;
PI Rappuoli R, Pizza M;
XX
DR WPI; 2000-318079/27.
XX
PT Isolated nucleotide sequences of Neisseria meningitidis which can be
PT used in the diagnosis and treatment of N. meningitidis infection and
PT other Neisserial infections, for example, N.gonorrhea -
XX
PS Claim 7; Page 466-471; 1760pp; English.
XX
CC The present invention describes methods of obtaining immunogenic
CC proteins from Neisseria genomic sequences. AAA81453 to AAA82414
CC represent specifically claimed Neisseria meningitidis genomic DNA
CC sequences; AAA81260 to AAA81303 and AAB25620 to AAB25663 represent
CC Neisseria DNA sequences and their corresponding proteins; AAA81254 to
CC AAA81259 and AAA81304 to AAA81321 represent PCR primers used in the
CC isolation of Neisseria meningitidis DNA sequences; and AAA81322 to
CC AAA81452 represent Neisseria meningitidis MenB polynucleotide ORF
CC sequences, which are all used in the exemplification of the present
CC invention. The nucleic acid sequences, protein sequences, and antibodies
CC against them, can be used in the manufacture of a composition. The
CC composition can be used as a medicament (or in the manufacture of a
CC medicament) for treating, preventing or diagnosing infection due to
CC Neisserial bacteria. For example, some of the identified proteins could
CC be components of vaccines against Meningococcus B; against all serotypes;
CC and/or against all pathogenic Neissariae. Identification of sequences
CC from the bacterium will also facilitate production of biological probes,
CC particularly organism-specific probes. Attempts to make efficacious
CC Meningococcus B vaccines have failed mainly due to antigen tolerance.
CC Multivalent vaccines have also been tried but none have successfully
CC overcome antigenic variability. The provision of further, complete
CC sequences may provide an opportunity to identify secreted or surface
CC exposed proteins that may be presumed targets for the immune system and
CC which are not antigenically variable or at least more conserved than
CC other more variable regions.
XX
SQ Sequence 16526 BP; 3183 A; 4006 C; 5067 G; 4268 T; 2 other;

Query Match 4.1%; Score 180.8; DB 21; Length 16526;
Best Local Similarity 61.3%; Pred. No. 8.5e-41;
Matches 309; Conservative 0; Mismatches 192; Indels 3; Gaps 1;

```
Qy   1212 attgatacttaccagcaacatcaaccaaggcgcgggcggtttgtattttgagggtaatttt 1271
          | |||| ||  |   ||| |||||||||||||| | ||  ||| | || ||  | || ||
Db   7246 ACTGATGCTGGCAGACAATATCAACCAAGGCGCAGGCGCATTGCAGTTCGACAGCAACTT 7187

Qy   1272 tacggtctcgcctaaaaacaacgaaacgtggcaaggcgcgggcgttcatatcagtgatgg 1331
           || |||     ||||||| ||   || |||||||| || ||||||    |    || ||
Db   7186 CACCGTCGTCGGTAAAAACCAC---ACATGGCAAGGTGCAGGCGTTATCGTAGCCGACGG 7130

Qy   1332 cagtaccgttacttggaaagtaaacggcgtggcaaacgaccgcctgtccaaaatcggcaa 1391
           ||    |||    ||| |||| | |  |     |  |||||| || |||||| | |||
Db   7129 CAAACGCGTCTTCTGGCAAGTCAGCAACCCCAAAGGCGACCGGCTCTCCAAACTGGGCGC 7070

Qy   1392 aggcacgctgctggttcaagccaaaggggaaaaccaaggctcggtcagcgtgggcgacgg 1451
          |||||||||  | |   | |   ||||    ||||| |||    ||||| | || || ||
Db   7069 AGGCACGCTTATCGCCAACGGACAAGGCATCAACCAGGGCGACATCAGCATCGGGGAAGG 7010

Qy   1452 taaagtcatcttagatcagcaggcggacgatcaaggcaaaaaacaagcctttagtgaaat 1511
           |  ||| |  | |  ||  | || |      | ||||  |||||||| || |   || |
Db   7009 CACTGTCGTACTCGCCCAAAAAGCTGCTTCAGACGGCAGCAAACAAGCATTCAACCAAGT 6950

Qy   1512 cggcttggtcagcggcaggggcacggtgcaactgaatgccgataatcagttcaaccccga 1571
          ||||  |  ||||||||||| ||||     ||    | |    | ||  |||| |||||
Db   6949 CGGCATCACCAGCGGCAGGGGCACGGCCGTCCTCGCCGACAGCCAGCAAATCAAACCCGA 6890

Qy   1572 caaactctatttcggctttcgcggcggacgtttggatttgaacgggcattcgctttcgtt 1631
           || ||||||||||||||  | ||||||||  | ||  | ||
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